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THE UNIVERSITY OF ALBERTA

A TECHNOLOGICAL ANALYSIS OF LAKE ABITIBI BIFACES

APPENDICES

by



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A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH  
IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE  
DOCTOR OF PHILOSOPHY

DEPARTMENT OF ANTHROPOLOGY

EDMONTON, ALBERTA  
FALL, 1984







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# APPENDIX 1. PRELIMINARY DESCRIPTION - JORDAN SITE BIFACES

Table 32: Description of All Archaeological Bifacial Specimens From the Jordan Site (DeHa-8)

Cat. No.	Description	No. Spec.	Metrics
C01056	biface fragment	1	fractured oval - dorsal and ventral faces secondary flaked and thin flaked - some retouching - 79.9 g - L. 11.8, W. 6.6, T. 1.2 cm
C01057	biface fragment	1	rectangular - dorsal and ventral faces secondary flaked, thin flaked and some retouching on three sides 21.2 g - L. 5.1, W. 3.9, T. 0.9 cm
C01058	biface fragment	1	fractured oval - dorsal face primary flaked, one side thin flaked and retouched - ventral face secondary flaked, two sides retouched - 89.5 g - L. 8.3, W. 5.4, T. 1.8 cm
C01059	biface fragment	1	dorsal face primary flaked, one side slightly retouched - ventral side secondary flaked, same side retouched - 40.6 g - L. 8.3, W. 3.3, T. 1.5 cm
C01060	biface fragment	1	dorsal face primary flaked, some chips removed from one edge ventral face fairly smooth but thin flaked - 12.6 g - L. 5.6, W. 2.2, T. 1.1 cm
C01061	biface fragment	1	dorsal face primary flaked, some thin flaking - ventral face secondary flaked, some thin flaking - 24.3 g - L. 4.8, W. 3.1, T. 1.1
C01062	biface fragment	1	dorsal face secondary flaked and thin flaked on all sides - ventral face smooth with two sides thin flaked - 10.3 g - L. 4.4, W. 3.9, T. 0.8 cm
C01063	biface fragment	1	dorsal face secondary flaked with retouching one side by nicking (chipping) ventral face secondary flaked one end fractured - 15.4 g - L. 5.5, W. 1.5, T. 0.7 cm





Table 32 continued.

Cat. No.	Description	No. Spec.	Metrics
C01064	biface fragment	1	ovoid fracture, dorsal and ventral faces secondary thin flaked - 70.0 g - L. 8.2, W. 5.6, T. 2.4 cm
C01066	bifacial chopper	1	dorsal and ventral faces secondary flaked, no primary flaking visible, all sides are thin flaked the majority done on the dorsal face - two longest opposing sides are blunted due to percussion against other rock material - 388.6 g - L. 12.3, W. 7.3, T. 3.0 cm
C01067	biface	1	dorsal and ventral faces secondary flaked, thin flaked on all sides, two sides thinner than the third which is also retouched more than the other two - little retouching on the ventral face - 107 g - L. 10.8, W. 6.6, T. 1.2 cm
C01068	biface	1	dorsal face secondary flaked, thin flaked on all sides except platform, retouching on sides but more so on one side which is also blunter - ventral face secondary flaked and thin flaked - 31.6 g - L. 6.7, W. 3.9, T. 1.0 cm
C01069	biface	1	dorsal face is primary flaked with some thin flaking - ventral face secondary flaked, hinge fracture - probably incomplete tool - 113 g - L. 9.8, W. 4.9, T. 2.4 cm
C01070	large biface	1	dorsal and ventral faces secondary flaked, thin flaked and some re- touching on all sides - possible ovoid or lanceolate as it is frac- tured - 361.0 g - L. 18.2, W. 11.6, T. 1.7 cm
C01071	large biface	1	lanceolate - dorsal and ventral faces secondary flaked, thin flaked and some retouching on all sides - 647.3 g - L. 25.6, W. 11.2, T. 2.0 cm





Table 32 continued.

Cat. No.	Description	No. Spec.	Metrics
C01072	large biface	1	elongated lanceolate - dorsal and ventral faces secondary flaked, thin flaked and some retouching on all sides - 548.0 g - L. 28.9, W. 9.4, T. 1.9 cm
C01073	large biface	1	ovoid with stem - dorsal and ventral faces secondary flaked, thin flaked and some retouching on all sides - 559.6 g - L. 27.5, W. 10.4, T. 1.5 cm
C01074	lanceolate biface	1	dorsal and ventral faces secondary flaked, thin flaked and retouched on all sides - 21.0 g - no platform L. 7.4, W. 4.0, T. 0.9 cm
C01075	lanceolate biface	1	dorsal and ventral faces secondary flaked, thin flaked with little retouching on all sides - distinct platform - 56.0 g - L. 9.7, W. 3.5, T. 1.3 cm
C01076	lanceolate biface	1	fractured probably during manufacture as it appears incomplete - is mainly primary flaking on dorsal face and light secondary flaking on ventral face - thin flaking not complete - 30.5 g - L. 7.3, W. 3.7, T. 1.2 cm
C01077	lanceolate bifaces	2	cemented together - dorsal and ventral faces secondary flaked, thin flaked with some retouching on all sides - 13.0 g - L. 5.6, W. 2.4, T. 0.7 cm
C01078	lanceolate biface	1	dorsal and ventral faces secondary flaked, thin flaked and retouched on all sides - 36.7 g - L. 8.7, W. 4.0, T. 1.1 cm
C01079	lanceolate biface	1	dorsal and ventral faces secondary flaked, thin flaked and retouched on all sides - 43.4 g - L. 10.2, W. 4.2, T. 1.1 cm



Table 32 continued.

Cat. No.	Description	No. Spec.	Metrics
C01080	lanceolate biface	1	dorsal and ventral faces secondary flaked, ventral more so, thin flaked and retouched on all sides - 41.5 g - L. 9.5, W. 2.7, T. 1.1 cm
C01081	lanceolate biface	2	not completed due to fracture and bad thin flaking - 2 sections cemented together - large platform - dorsal and ventral faces show secondary flaking - thin flaked on all sides - 37.0 g - L. 9.3, W. 3.6, T. 1.1 cm
C01082	lanceolate biface	1	not completed due to fracture - platform still present - rough thin flaking - 35.2 g - L. 6.9, W. 3.8, T. 1.2 cm
C01083	lanceolate biface	1	dorsal and ventral faces secondary flaked, thin flaked some retouching on all sides - 53.8 g - L. 10.3, W. 4.8, T. 1.3 cm
C01084	lanceolate biface	1	dorsal and ventral faces secondary flaked, thin flaked and retouched on all sides - 35 g - L. 8.8, W. 4.1, T. 1.0 cm
C01085	lanceolate biface	1	dorsal and ventral faces secondary flaked, thin flaked and retouched on all sides - 64.6 g - L. 11.0, W. 5.0, T. 1.2 cm
C01086	lanceolate biface	1	dorsal and ventral faces secondary flaked, thin flaked and extensively retouched on all sides - 33.4 g - L. 8.7, W. 4.0, T. 1.0 cm
C01087	lanceolate biface	1	dorsal and ventral faces secondary flaked, thin flaked and retouched on all sides - 25.7 g - L. 8.0, W. 3.6, T. 1.9 cm
C01088	lanceolate biface	1	dorsal and ventral faces secondary flaked, thin flaked and retouched on all sides - 26.0 g - L. 7.2, W. 3.8, T. 1.0 cm





Table 32 continued.

Cat. No.	Description	No. Spec.	Metrics
C01089	lanceolate biface	1	dorsal and ventral faces secondary flaked, thin flaked and extensively retouched - 24.4 g - L. 7.1, W. 3.6, T. 1.6 cm
C01090	lanceolate biface	1	dorsal and ventral faces secondary flaked, thin flaked and some re-touching on all sides - 12.0 g - L. 7.2, W. 3.6, T. 0.7 cm
C01091	lanceolate biface	1	dorsal and ventral faces secondary flaked, thin flaked and some re-touching on all sides - 27.8 g - L. 7.3, W. 3.3, T. 1.1 cm
C01092	stemmed biface	1	fractured tip - dorsal and ventral faces secondary flaked, thin flaked with little retouching on sides - base notched out to form neck - 38.1 g - L. 8.3, W. 3.9, T. 1.0 cm
C01093	stemmed biface	1	dorsal and ventral faces secondary flaked, thin flaked with some re-touching on two sides - base is notched out to form neck - 9.0 g - L. 5.4, W. 2.8, T. 0.6 cm
C01094	lanceolate biface preform	1	dorsal face secondary flaked, thin flaked, and some retouching on sides ventral face smooth except few flakes removed - tip fractured - 24.2 g - L. 6.4, W. 3.8, T. 0.9 cm
C01095	lanceolate biface preform	1	dorsal and ventral faces secondary flaked with some thin flaking - needs more flaking to get a sharper edge - 26.0 g - L. 6.4, W. 3.5, T. 1.2 cm
C01096	lanceolate biface preform	1	dorsal and ventral faces secondary flaked - needs more thin flaking for completion - 10.9 g - L. 5.1, W. 2.6, T. 0.8 cm





Table 32 continued.

Cat. No.	Description	No. Spec.	Metrics
C01097	lanceolate biface fragment	1	upper half with tip - dorsal and ventral faces secondary flaked, thin flaked with little retouching - 14.0 g - L. 4.7, W. 3.4, T. 0.8 cm
C01098	lanceolate biface fragment	1	mid section or possibly just missing tip - dorsal and ventral faces secondary flaked and thin flaked on two sides - 15.6 g - L. 3.9, W. 3.8, T. 0.8 cm



## APPENDIX 2. PRELIMINARY DESCRIPTION - JESSUP SITE BIFACES

Table 33: Metric Description of All Archaeological Bifacial Specimens  
From the Jessup Site (DdGw-2)

Cat. No.	Description	No. Spec.	Metrics
C02500	biface	1	possible initial reduction stage for narrow black bifaces with pro- nounced convex bases. L. 12.51, W. 5.18, T. 2.93 cm
C02091	biface	1	possible initial reduction stage for narrow black bifaces with pro- nounced convex bases. L. 11.61, W. 5.34, T. 2.61 cm
C02556	biface	1	possible initial reduction stage for narrow black bifaces with pro- nounced convex bases. L. 9.68, W. 5.08, T. 2.45 cm
	biface	1	broad blade expanding to moder- ately rounded (convex base) - rounded corners - asymmetrical. L. 8.57, W. 4.83, T. 2.48 cm
C02558	biface	1	broad blade expanding to moder- ately rounded (convex base) - rounded corners - asymmetrical. L. 9.80, W. 5.12, T. 2.30 cm
	biface	1	broad blade expanding to moder- ately rounded (convex base) - rounded corners - asymmetrical - base unfinished. L. 10.48, W. 5.64, T. 3.26 cm
C02333	biface	1	narrow blade tapering to a pro- nounced convex base - broken. L. 7.44, W. 4.75, T. 1.90 cm
C02349	biface	1	narrow blade tapering to a pro- nounced convex base - broken. L. 9.96, W. 5.09, T. 1.85 cm
C02554	biface	1	incomplete bifacial flaking - thick and comparatively "crude" - essen- tially broad bladed tapering to a pronounced convex base - broken. L. 7.75, W. 4.66, T. 2.05 cm





Table 33 continued.

Cat. No.	Description	No. Spec.	Metrics
C02318	biface	1	narrow blade with moderately convex base - broken. L. 7.54, W. 4.15, T. 1.66 cm
C02191	biface	1	broad blade with broad shallow convex base - rounded shoulder incomplete bif. flaking. Unifacial secondary flake removal uni-lat. & dist. - poss. post breakage - alternate usage as a scraper blank - broken. L. 8.34, W. 5.29, T. 1.63 cm
C02177	biface	1	broad blade with broad, moderately convex base - broken. L. 4.02, W. 5.94, T. 1.60 cm
C02185	biface	1	broad blade with broad, moderately convex base - broken. L. 8.04, W. 5.57, T. 1.52 cm
C02146	biface	1	broad blade tapering to broad flat to slightly convex base with rounded corners. L. 12.48, W. 6.06, T. 1.40 cm
C02510	biface	1	broad blade tapering to broad straight to slightly convex base. L. 12.22, W. 6.38, T. 1.68 cm
C02170	biface	1	broad blade tapering to broad straight to slightly convex base. L. 6.77, W. 5.90, T. 1.91 cm
C02193	biface	1	broad blade tapering to broad straight to shallow convex base with rounded corners - slightly ground lateral edges - prob. for platform preparation - broken. L. 7.69, W. 5.61, T. 1.35 cm
C02350	biface	1	broad blade tapering to broad straight to shallow convex base - broken. L. 9.13, W. 4.96, T. 1.86 cm



Table 33 continued.

Cat. No.	Description	No. Spec.	Metrics
C02088	biface	1	broad blade tapering to broad straight to shallow convex base with rounded edges. L. 9.55, W. 4.63, T. 2.03 cm
C02134	biface	1	broad blade tapering to broad straight to shallow convex base with rounded edges - incomplete bifacial flaking on flake blank. L. 7.80, W. 4.45, T. 1.64 cm
C02365	biface	1	narrow blade tapering to a straight base with rounded corners L. 8.58, W. 3.70, T. 1.50 cm
C02072	biface	1	narrow blade tapering to pronounced rounded base. L. 8.10, W. 3.45, T. 1.20 cm
C02362	biface	1	narrow blade tapering to pronounced rounded (convex) base - incomplete bif. flaking - base unfinished. L. 8.21, W. 3.80, T. 1.90 cm
C02099	biface	1	narrow blade tapering to a rounded base. L. 7.0, W. 3.12, T. 1.24 cm
C02135	biface	1	narrow blade tapering to pronounced rounded base - similar form to 5-A. L. 10.28, W. 3.50, T. 1.72 cm
C02080	biface	1	broad blade with broad pronounced rounded base - incomplete bifacial flaking. L. 10.20, W. 4.92, T. 1.59 cm
C02075	biface	1	broad blade with broad rounded base. L. 8.51, W. 4.28, T. 1.52 cm
C02076	biface	1	broad blade with broad rounded base - may represent unused scraper preform or cutting tool with natural backed edge. L. 8.46, W. 4.06, T. 1.50 cm





Table 33 continued.

Cat. No.	Description	No. Spec.	Metrics
C02373	biface	1	incomplete bifacial flaking - narrow blade, rounded pronounced (convex) base - proximal end missing - broken. L. 8.04, W. 3.98, T. 1.21 cm
C02179	biface	1	base not thinned - original striking platform still present - narrow blade - pronounced rounded (convex) base - proximal end missing - broken. L. 5.61, W. 4.05, T. 1.25 cm
C02163	biface	1	narrow blade, pronounced rounded (convex) base - proximal end missing - broken. L. 6.34, W. 4.19, T. .95 cm
C02164	biface	1	narrow blade, pronounced rounded (convex) base - proximal end missing - broken. L. 5.22, W. 3.66, T. .84 cm
C02289	biface	1	narrow blade with pronounced rounded (convex) base - proximal end missing - broken. L. 6.76, W. 3.69, T. 1.06 cm
C02295	biface	1	narrow blade tapering to pronounced rounded (convex) base - broken. L. 7.26, W. 4.05, T. 1.12 cm
C02145	biface	1	narrow blade - base missing - broken. L. 9.59, W. 3.75, T. 1.01 cm
C02555	biface	1	biface tip.
C02264	biface	1	narrow blade.
C02142	biface	1	basal section missing.
C02268			
C02167	biface	1	basal section, narrow blade, tapering to pronounced rounded (convex) base - broken. L. 5.45, W. 4.13, T. .90 cm



Table 33 continued.

Cat. No.	Description	No. Spec.	Metrics
C02081	biface	1	short, broad bladed biface with broad but pronounced rounded (convex) base. L. 6.78, W. 4.74, T. 1.15 cm
C02074	biface	1	short, broad bladed biface with broad but pronounced rounded base (convex). L. 7.54, W. 4.23, T. 1.10 cm
C02176	biface	1	short, broad bladed biface with broad but pronounced rounded base (convex) - broken. L. 6.64, W. 5.0, T. 1.03 cm
C02330	biface	1	short, broad bladed biface with broad but pronounced rounded base (convex) - broken. L. 6.60, W. 5.50, T. 1.41 cm
C02183	biface	1	broad blade with broad pronounced rounded base - incomplete bif. flaking - broken. L. 7.19, W. 4.91, T. .90 cm
C02341	biface	1	broad blade with broad pronounced rounded base - incomplete bif. flaking - broken. L. 8.67, T. 1.47 cm
C02077	biface	1	broad blade with broad but pronounced rounded base. L. 9.76, W. 4.80, T. 1.36 cm
C02079	biface	1	broad blade with broad but pronounced rounded base - incomplete bif. flaking. L. 10.77, W. 4.44, T. 1.56 cm
C02186	biface	1	broad blade with broad rounded base - broken. L. 5.32, W. 5.09, T. 1.04 cm
C02325	biface	1	broad blade with broad but shallow to straight base with rounded corners - broken. L. 4.45, W. 4.14, T. .86 cm





Table 33 continued.

Cat. No.	Description	No. Spec.	Metrics
C02174	biface	1	broad blade with broad but shallow to straight base with rounded corners - broken. L. 5.81, W. 3.94, T. .84 cm
C02322	biface	1	broad blade with broad but shallow to straight base with rounded corners - broken. L. 6.98, W. 4.06, T. 1.13 cm
C02187	biface	1	broad blade with broad but shallow to straight base with rounded corners - broken. L. 6.36, W. 4.35, T. 1.35 cm
C02313	biface	1	broad blade with broad but shallow to straight base with rounded corners - two pieces. L. 7.06, W. 3.86, T. .74 cm
C02359	biface	1	broad blade with broad but shallow to straight base with rounded corners - two pieces. L. 9.64, W. 4.06, T. 1.30 cm
C02173	biface	1	broad blade with broad but shallow to straight base with rounded corners - broken - incomplete bif. flaking. L. 8.90, W. 5.64, T. 1.03 cm
C02071	biface	1	broad blade with broad but shallow convex base - no basal thinning, poss. striking platform from flake preform still present - two pieces. L. 10.88, W. 4.72, T. 1.54 cm
C02082	biface	1	two sections - glued - narrow blade tapering to pronounced rounded (convex) base. L. 13.70, W. 3.63, T. 1.19 cm
C02096	biface	1	two sections - glued - narrow blade tapering to base - base less convex than above. L. 8.75, W. 3.37, T. .98 cm



Table 33 continued.

Cat. No.	Description	No. Spec.	Metrics
C02357	biface	1	narrow blade tapering to pronounced rounded (convex) base - biface on hinged flake preform - incomplete bifacial flaking. L. 10.78, W. 3.66, T. 1.30 cm
C02364	biface	1	narrow blade tapering to pronounced rounded (convex) base - pronounced step fractures unilat. - unsuccessful attempt to thin medial ridge of biface. L. 9.15, W. 3.20, T. 1.17 cm
C02263	biface	1	narrow blade tapering to pronounced rounded (convex) base - poss. crude collateral flaking on one face - broken - proximal end missing. L. 7.40, W. 3.54, T. 1.19 cm
C02363	biface	1	assymetrical biface - narrow blade tapering to moderately rounded base L. 7.80, W. 2.90, T. .88 cm
C02069	biface	1	biface on hinged flake blank - narrow blade with moderately rounded base - incomplete bifacial flaking. L. 7.43, W. 3.20, T. 1.03 cm
C02070	biface	1	broad blade with broad but shallow convex to straight base with rounded corners. L. 9.31, W. 4.24, T. .94 cm
C02169	biface	1	broad blade with broad but shallow convex to straight base with rounded corners. L. 10.53, W. 4.38, T. 1.41 cm
C02166	biface	1	broad blade with broad but shallow convex to straight base with rounded corners - tip not finished - biface generally assymetrical in form. L. 12.58, W. 4.80, T. .99 cm
C02068	biface	1	broad blade tapering to fairly broad slightly convex base. L. 8.05, W. 3.82, T. .86 cm





Table 33 continued.

Cat. No.	Description	No. Spec.	Metrics
C02173	biface	1	broad based thin biface basal section - broken - base shallow convex-rounded - incomplete bifacial flaking - step fractured distally - unsuccessful basal thinning - broken. L. 8.90, W. 5.64, T. 1.03 cm
C02330	biface	1	broad based refined bif. - broken - base shallow convex-rounded - complete bif. flaking. L. 6.60, W. 5.50, T. 1.41 cm
C02193 Stage 3	biface	1	broad based thin biface - broken - base shallow convex-rounded - complete bif. flaking - lat. edges ground - platform prep. L. 7.69, W. 5.61, T. 1.35 cm
C02186	biface	1	broad based - shallow convex base - broken - complete bif. flaking. L. 5.32, W. 5.09, T. 1.04 cm
C02176	biface	1	refined biface basal section - broken - base broad but pronounced round (convex). L. 6.64, W. 5.0, T. 1.03 cm
C02183	biface	1	refined biface basal section - broken - base broad with a more pronounced convexity- rounding - incomplete bif. flaking. L. 7.19, W. 4.91, T. .90 cm
C02081	biface	1	short broad based biface - pronounced convex base - possibly reworked from larger broken biface - complete bifacial flaking. L. 6.78, W. 4.74, T. 1.15 cm
C02077	biface	1	broad based with rounded pronounced convex base - complete bifacial flaking - two sections. L. 9.76, W. 4.80, T. 1.36 cm
C02072	biface	1	complete preform - rounded (convex) base - no second retouch. L. 8.10, W. 3.45, T. 1.20 cm



Table 33 continued.

Cat. No.	Description	No. Spec.	Metrics
C02359	biface	1	two pieces - slight bilat. retouch - probably edge preparation - straight base - rounded corners. L. 9.64, W. 4.06, T. 1.30 cm
C02075	biface	1	crude biface preform - complete rounded (convex) base - slight second retouch - prob. edge preparation. L. 8.51, W. 4.28, T. 1.52 cm
C02365	biface	1	straight base - refined except for mass near base. L. 8.58, W. 3.70, T. 1.50 cm
C02135	biface	1	broken - two pieces - refined except for mass in centre at break - rounded base, some retouch. L. 10.28, W. 3.50, T. 1.72 cm
C02362	biface	1	base unfinished - incomplete bifacial flaking. L. 8.21, W. 3.80, T. 1.90 cm
C02099	biface	1	rounded base - small unfinished preform. L. 7.0, W. 3.12, T. 1.24 cm
C02085	biface	1	straight base - thin preform. L. 8.83, W. 3.80, T. .97 cm
C02084	biface	1	unfinished base - platform still on base from initial removal of flake on which biface was manufactured. L. 7.60, W. 4.0, T. .94 cm
C02169	biface	1	complete bifacial flaking - light second retouch bi-lat. and distally - shallow convex base. L. 10.53, W. 4.38, T. 1.41 cm
C02070	biface	1	complete bifacial flaking - light second retouch bi-lat. and dist. - shallow but more pronounced convex base. L. 9.31, W. 4.24, T. .94 cm



Table 33 continued.

Cat. No.	Description	No. Spec.	Metrics
C02074	biface	1	complete bif. flaking - light second retouch bi-lat. & dist. - pronounced rounded (convex) base. L. 7.54, W. 4.23, T. 1.10 cm
C02138	biface	1	incomplete unifacial flaking on dorsal surface - light retouch distal and uni-lat. edges. L. 8.03, W. 4.53, T. 1.40 cm
C02185	biface	1	primarily unifacial flaking - dorsal surface - partially flaked on ventral face - thin - step flakes removed - broken. L. 7.26, W. 4.45, T. 1.61 cm
C02140	biface	1	complete flaking dorsal surface - incomplete flaking ventral surface - marked bi-lateral stepping - rounded base. L. 6.93, W. 3.24, T. .59 cm
C02076	biface	1	light retouch distally & uni- laterally - other lateral edge unmodified - too thick for effective reduction - naturally backed edge? L. 8.46, W. 4.06, T. 1.50 cm
C02555	biface	1	tip section of refined biface. L. 5.64, W. 3.30, T. .93 cm
C02100	biface	1	in two sections, snapped bi-lat. - prob. straight base, however, basal edge removed accidentally during thinning process. L. 9.10, W. 3.93, T. 1.20 cm
C02357	biface	1	biface on hinged flake preform - incomplete bifacial flaking - rounded base (convex) no retouch. L. 10.78, W. 3.66, T. 1.30 cm
C02096	biface	1	in two sections - snapped bi-lat. - straight base - rounded edges - slight bi-lat. secondary retouch. L. 8.75, W. 3.37, T. .908 cm





Table 33 continued.

Cat. No.	Description	No. Spec.	Metrics
C02068	biface	1	refined biface - slightly convex base - some bi-lat. second retouch. L. 8.05, W. 3.82, T. .900 cm
C02069	biface	1	bifacially flaked preform - no retouch - on a hinged flake blank - slightly convex base - some secondary retouch. L. 7.43, W. 3.20, T. 1.03 cm
C02082	biface	1	in two sections - snapped bi-lat. rounded (convex) base - bi-lat. step fractures either from thinning or edge preparation. L. 13.70, W. 3.63, T. 1.19 cm
C02929	biface	1	bifacially flaked biface - in two sections - secondary retouch unifacially at distal end - poss. intended re-use of broken section as a scraper - very slight use-wear - rounded base. L. 9.32, W. 4.26, T. .903 cm
C02363	biface	1	rounded base asymmetrical biface - no secondary retouch - tip broken L. 7.80, W. 2.90, T. .808 cm
C02364	biface	1	rounded base - no retouch. L. 9.15, W. 3.20, T. 1.17 cm
C02163	biface	1	narrow pronounced convex based biface - basal section - refined biface - broken. L. 6.36, W. 4.14, T. .90 cm
C02263	biface	1	narrow with pronounced convex base - complete bi-facial flaking - crude collateral flaking on one face - broken. L. 7.40, W. 3.54, T. 1.19 cm
C02289	biface	1	narrow with pronounced rounded convex base - complete bif. flaking.
C02080	biface	1	biface preform incomplete bif. flaking rounded base. L. 10.20, W. 4.92, T. 1.59 cm



### APPENDIX 3. EXPERIMENTAL VIDEOTAPE SCRIPT

Table 34: Abstracted Script of Lithic Experiments, Videotape V-22-04-001

#### Introduction

- 30 John Pollock introducing the experiment.  
285 Young talking about experiment research design. First Rob will make preforms. They will be dyed white. Then Rob will apply the units that they isolated in looking at the collection of Lake Abitibi artifacts. They will be photographed. Third stage will be taking preforms and applying one unit at a time to a preform.

#### Raw Material Evaluation

- 643 Rob on tape discussing what he is going to do, physical qualities of rock.

#### Making Preforms

- 947 Buffeting edge with granite hammerstone.  
984 Hits rock, it splits. (Hard to hear talking).  
1040 Striking again.  
1066 Takes smaller hammerstone, striking off small edges sticking out.  
1130 Using larger hammerstone to try to take off a larger flake. Angle is not right, he adjusts how he's holding rock. Gets a flake. Says rock is very grainy, hard to work.  
1228 Continues to strike.  
1248 Gets another nice flake.  
1285 Striking again. Gets some crushing.  
1300 Clearing area of crushing, results in remaining core being a "good slab."  
1347 Doing shaping on slab with small granitic hammerstone. It breaks in half due to flaw of iron precipitate in centre. Continues shaping now smaller piece.  
1433 It splits in half lengthwise.  
1454 He continues to shape. Running into more problems due to material. Decides to stop and move to some larger pieces.  
1540 Shaping a rough piece with small hammerstone.  
1684 Changes to a billet. Says if he had a choice of materials he would throw this piece away. Changes to billet because it will distribute force over a wider area, maybe not shatter as much.  
1777 He says he's setting up platforms.  
1792 Says now billet is too light, won't deliver enough energy, changes back to hammerstone.  
1850 Trimming off a lump.  
1865 Abrading edge with hammerstone.  
1880 Changes back to billet. Takes off a flake.  
1904 Getting rid of thin sharp edge.  
1927 Taking off short shaping flakes.  
2060 Material breaks. He shows flaw to camera. Did get a thinning flake.  
2140 Shaping another flake with a small sandstone pebble.  
2160 Sound problem.





Table 34 continued.

2183	Continues to shape.
2260	Thinning thick edge.
2290	Also trying to center the edge more.
2345	Abrading edge.
2354	Changing to caribou antler billet (it's harder than other antler).
2370	Gets a flake where he wanted.
2380	Continues to flake. Says his edge is a little too thin so he's taking off a series of short flakes to center it.
2400	Abrading edge with hammerstone. He grinds because if edge is real thin when you strike it will crush.
2419	Striking with billet.
2437	Edge grinding. He says this isn't just grinding, takes a few flakes off too (hammerstone moved vertically across edge).
2455	Striking with billet.
2494	Dulling edge with hammerstone.
2520	Gets nice flake.
2540	Edge grinding.
2550	Flaking with billet.
2555	Straightening edge with small hammerstone, says it's sort of a combination of flaking and grinding.
2584	Strikes with billet, gets a flake.
2634	Trimming flakes with billet to get a convex face.
2720	Taking off minimal thinning flakes, trying to get convex surface.
2760	Abrading edge.
2775	Thinning flakes with billet.
2850	Sound problem.
2903	Trimming with hammerstone on new flake. Wants to take off a bunch of short flakes.
3012	Continues flaking with hammerstone after discussion on why hammerstone instead of billet.
3070	It breaks in half. He says he hit it too hard, shocked it.
3106	Continues to thin and shape one of the broken halves.
3130	Changes to large billet, striking off thinning flakes to get rid of a few lumps.
3143	Abrading edge with billet to make sure edge is strong.
3150	Strikes, gets flake.
3169	Changes back to hammerstone.
3226	Striking with billet
3251	Cleaning edge up with small hammerstone.
3262	Abrading edge with hammerstone.
3270	Striking with billet.
3331	Using hammerstone to get rid of sharp little surfaces on edge.
3345	Striking with billet.
3366	Using small hammerstone to strike flakes.
3402	Got a sort of step fracture.
3431	Moving to experiment #4, early stage preforming.
3450	Striking large chunk with large hammerstone.
3480	Discussing undulations in rock.
3499	Setting up platforms.
3535	Changes to smaller hammerstone.
3547	Still trying to split off one ridge.
3580	Trimming edge with small hammerstone.



Table 34 continued.

- 3596 Strikes with large hammerstone, it splits because he had too big a mass. It split lengthwise, will continue with one piece.
- 3620 Break in tape.
- 3630 Starts with Rob holding large core that he's taking flakes off with large hammerstone.
- 3813 Using smaller hammerstone to set up platform.
- 3826 Using larger hammerstone to remove flakes.
- 3838 Using small hammerstone on edge.
- 3855 Using large hammerstone to take off flakes.
- 3869 Showing pile of flakes that they've just taken off.
- 3903 Rob appears to be filing a pressure flaker.

### Start of Experiments

(This section from here to 4719 is out of place. Should be after point 5327)

- 3938 This section of tape is out of order, should be somewhere at end of recordings. It's part of Experiment #7.
- 3942 AB16-7. Moderate percussion thin with hammerstone.
- 3975 AB11. Indirect percussion Experiment - from 3975 to 4719. Young says this is the end of the basic experiments in terms of units that they've analyzed before. Now are going to experiment with a new unit that they've never recorded before, the punch technique.
- 4017 Rob grinding edge so he'll have a more solid place to work from.
- 4042 Rob says punch techniques are awkward, hard to use, stand a good chance of breaking the end of your punch.
- 4065 Holding small antler punch on edge of preform, striking end of it with antler billet.
- 4108 Showing model artifact, shows what they are trying to get.
- 4130 Indirect percussion with billet as punch. Gets nice flat flake, what they wanted.
- 4175 Decide to call this experiment #11.
- 4202 Abrading edge of preform.
- 4215 Doing indirect percussion with billet as punch on other face.
- 4265 Abrading edge.
- 4285 Doing indirect percussion with billet, gets little flake.
- 4310 Beveling edge with hammerstone.
- 4329 Doing indirect percussion with billet. Gets little flake.
- 4351 Does it again.
- 4380 Trimming edge with hammerstone.
- 4390 Does indirect percussion with billet again.
- 4410 Same thing again.
- 4432 Same thing again.
- 4460 Rob wants to try it on obsidian.
- 4467 Abrading edge of obsidian preform.
- 4490 Doing indirect percussion with billet. Gets flake. Says it looks like a pressure flaker flake.
- 4538 Doing it again using small antler punch. Works better to use as lever.





## Table 34 continued.

- 4570 Doing same thing again.
- 4599 Rob says it's pure tension, no compression.
- 4622 Doing indirect percussion with billet held sideways as lever and preform held by his shoe.
- 4658 Trimming edge with billet using direct percussion.
- 4682 Doing indirect with billet, preform held by shoe again.
- 4719 AB10-1. Cut to Rob abrading edge of white painted preform.
- 4785 AB10-1. Abrading edge of preform with side of antler billet.
- 4838 AB2-2. Pressure rub with tip of pressure flaker. Rob says he doesn't really like the word rub because this is a unidirectional movement, rub implies two directions.
- 4900 AB2-2. Doing platform isolation with tip of pressure flaker. It is actually doing three different things. Middle one is edge rub, where he's just cleaning it up a little.
- 4990 AB2-2. Doing abrading of edge with hammerstone.
- 5019 AB9-5. Minimal pressure thinning/beveling with pressure flaker.
- 5049 Other side. Moderate pressure thin with pressure flaker. (They just said "This is still experiment #5).
- 5098 AB8-6. Experiment #6 - substantial pressure thin with pressure flaker.
- 5155 Holding up artifact to see flake scars. Says they look like moderate even though substantial force was applied.
- 5183 Doing platform preparation, edge rub with tip of pressure flaker.
- 5197 Shearing with edge of pressure flaker.
- 5202 Substantial pressure thinning with pressure flaker. Not really successful.
- 5242 AB5-9. Minimal percussion thinning with the billet.
- 5284 AB5-9. No sound at first. He's doing percussion thinning to other edge.
- 5327 AB7-10. No sound at first. Substantial percussion thinning with billet.
- N.B. Break in continuity. Return to point 3942 for AB16-7 and AB11.
- 5407 No sound. He's doing something with pressure flaker to edge, taking off projections, not thinning.
- 5443 AB13-15. Says they're "still on experiment #15." Moderate pressure shaping with the pressure flaker. This is what he usually uses almost exclusively for notching. It's an attempt to remove a fair amount of material straight down, not to thin. He breaks tip of pressure flaker.
- 5466 AB13-15. Switches to copper tipped pressure flaker. Doing moderate pressure shaping on base.





## Table 34 continued.

- 5488 Experiment AB14-16. Minimal percussion shape with hammerstone.  
5511 Other edge, moderate percussion shaping with the hammerstone.
- 5542 Experiment AB3-17. Substantial percussion shaping with the hammerstone.
- 5565 Experiment AB15-18. Minimal percussion shaping with the billet.
- 5592 Experiment AB15-18. Other edge, moderate percussion shaping with the billet.
- 5613 Experiment AB12-19. Substantial percussion shaping with the billet.
- 5640 Experiment AB6-13. Minimal shear shaping with the pressure flaker. Decide it was really moderate. Hard to do with antler, switches to copper tool min-mod to maximum-minimal on other side.
- 5679 End of cassette.



## APPENDIX 4. EXPERIMENTAL SPECIMENS

Table 35: Individual Flake Scar Attribute Form - Experimental Specimens

1.0 Experimental Specimen Catalogue Number:

1.1 Experimental Specimen Storage Location: University of Alberta

1.2 Lithic Raw Material Type Used: Welded Tuff from Lake Abitibi, Ont.

1.3 Modern Lithic Craftsman: Dr. R. Bonnicksen

1.4 Flake Scar Attributes

Coded From:	Photograph(s)	Drawing(s)	Artifact(s)
-------------	---------------	------------	-------------

1.5 Photographic Plate Identification Number:

1.6 Video Tape Reel Identification Number:

2.0 Description of Experiment:

2.1 Extent of Effect:

2.2 Type of Behavior:

2.3 Tool Used:

2.4 Total Flake Scars on Specimen:

2.5 Attributes on the following coding form are taken from Table 14:





Attributes and Attribute States	Attribute States Present on Experimental Flake Scars	#'s of Flake Scars Exhibiting Attribute State Checked in First Column	% of Relevant Scars Exhibiting Attribute State Checked in First Column
1.0 FLAKE SCAR PROXIMAL EDGE ATTRIBUTES			
1.0 FLAKE SCAR SIZE			
1.1.1	very minimal		
1.1.2	minimal		
1.1.3	moderate		
1.1.4	substantial		
1.1.5	very substantial		
2.0 FLAKE SCAR PROXIMAL EDGE ATTRIBUTES			
2.1 EDGE SHARPNESS			
2.1.1	sharp edge		
2.1.2	intermediate edge		
2.1.3	dull edge		
2.2 MARGIN DAMAGE			
2.2.1	absent or rare		
2.2.2	light		
2.2.3	heavy		
2.3 MICROFLAKES			
2.3.1	absent		
2.3.2	light		
2.3.3	heavy		
2.4 PROX. EDGE MORPH.			
2.4.1	straight		



---

2.4.2 U shaped notch

---

2.4.3 flat curved notch

---

2.4.4 convex projections

---

2.4.5 other

---

### 3.0 FLAKE SCAR PROFILE ATTRIBUTES

---

3.1 PERCUSSION BULB

---

3.1.1 not applicable

---

3.1.2 indistinct

---

3.1.3 distinct

---

3.2 TRANSITION ANGLE

---

3.2.1 not applicable

---

3.2.2 gradual rise

---

3.2.3 steep rise

---

3.3 FLAKE THICKNESS

---

3.3.1 not applicable

---

3.3.2 thin

---

3.3.3 thick

---

### 4.0 FLAKE SCAR INTERIOR MORPHOLOGY ATTRIBUTES

---

4.1 RIBS

---

4.1.1 absent

---

4.1.2 limited

---

4.1.3 moderate

---

4.1.4 extensive

---

4.1.5 very extensive

---

4.2 DISTINCTIVENESS/RIBS

---

4.2.1 not applicable

---



---

4.2.2 indistinct

---

4.2.3 moderately distinct

---

4.2.4 pronounced

---

4.2.5 variable

---

4.3 RIB SPACING

---

4.3.1 not applicable

---

4.3.2 far apt. evenly dist.

---

4.3.3 far apt. on dist. half

---

4.3.4 close, evenly dist.

---

4.3.5 close, on dist. half

---

4.3.6 variable

---

4.4 TEARING

---

4.4.1 absent

---

4.4.2 light

---

4.4.3 heavy

---

## 5.0 FLAKE SCAR DISTAL EDGE ATTRIBUTES

---

5.1 SCAR SHAPE DIST. EDGE

---

5.1.1 straight dist. edge

---

5.1.2 rounded dist. edge

---

5.1.3 irregular dist. edge

---

5.2 SCAR TERMINATION

---

5.2.1 feather

---

5.2.2 step

---





Table 36: Individual Flake Scar Attribute Form - Experimental Specimens

- 1.0 Experimental Specimen Catalogue Number: AB10-1 (Side A)
- 1.1 Experimental Specimen Storage Location: University of Alberta
- 1.2 Lithic Raw Material Type Used: Welded Tuff from Lake Abitibi, Ont.
- 1.3 Modern Lithic Craftsman: Dr. R. Bonnicksen
- 1.4 Flake Scar Attributes
- Coded From:      Photograph(s) X      Drawing(s) X      Artifact(s) X
- 1.5 Photographic Plate Identification Number: Roll 3 A4 #35
- 1.6 Video Tape Reel Identification Number: V-22-04-001 - footage 4719
- 2.0 Description of Experiment:
- Experiment AB10-1 involved the edge buffet with a hammerstone using minimal force in a working direction from the tip of the preform to the base along the left lateral margin as shown in diagram (Side A). The edge is blunted or rounded so that it will not crush when used as a platform for removal of flakes. An alternative purpose would be to smooth the edge after removal of flakes (Nicholas & Bonnicksen n.d.:10-11).
- 2.1 Extent of Effect: minimal - 2
- 2.2 Type of Behavior: rub buffet - 12 (edge - dulling)
- 2.3 Tool Used: hammerstone - 41
- 2.4 Total Flake Scars on Specimen: 4
- 2.5 Attributes on the following coding form are taken from Table 14:



Attributes and Attribute States	Attribute States Present on Experimental Flake Scars	#'s of Flake Scars Exhibiting Attribute State Checked in First Column	% of Relevant Scars Exhibiting Attribute State Checked in First Column
1.0 FLAKE SCAR PROXIMAL EDGE ATTRIBUTES			
1.0 FLAKE SCAR SIZE			
1.1.1 very minimal	X	all	100%
1.1.2 minimal			
1.1.3 moderate			
1.1.4 substantial			
1.1.5 very substantial			
2.0 FLAKE SCAR PROXIMAL EDGE ATTRIBUTES			
2.1 EDGE SHARPNESS			
2.1.1 sharp edge			
2.1.2 intermediate edge	X	all	100%
2.1.3 dull edge			
2.2 MARGIN DAMAGE			
2.2.1 absent or rare			
2.2.2 light			
2.2.3 heavy	X	1,2,3,4	100%
2.3 MICROFLAKES			
2.3.1 absent	X	all	100%
2.3.2 light			
2.3.3 heavy			
2.4 PROX. EDGE MORPH.			
2.4.1 straight			





2.4.2	U shaped notch			
2.4.3	flat curved notch			
2.4.4	convex projections	X	(follows original edge)	
2.4.5	other			
3.0 FLAKE SCAR PROFILE ATTRIBUTES				
3.1	PERCUSSION BULB			
3.1.1	not applicable	X	all	100%
3.1.2	indistinct			
3.1.3	distinct			
3.2	TRANSITION ANGLE			
3.2.1	not applicable	X	all	100%
3.2.2	gradual rise			
3.2.3	steep rise			
3.3	FLAKE THICKNESS			
3.3.1	not applicable	X	all	100%
3.3.2	thin			
3.3.3	thick			
4.0 FLAKE SCAR INTERIOR MORPHOLOGY ATTRIBUTES				
4.1	RIBS			
4.1.1	absent	X	all	100%
4.1.2	limited			
4.1.3	moderate			
4.1.4	extensive			
4.1.5	very extensive			
4.2	DISTINCTIVENESS/RIBS			
4.2.1	not applicable	X	all	100%



4.2.2	indistinct			
4.2.3	moderately distinct			
4.2.4	pronounced			
4.2.5	variable			
4.3	RIB SPACING			
4.3.1	not applicable	X	all	100%
4.3.2	far apt. evenly dist.			
4.3.3	far apt. on dist. half			
4.3.4	close, evenly dist.			
4.3.5	close, on dist. half			
4.3.6	variable			
4.4	TEARING			
4.4.1	absent	X	all	100%
4.4.2	light			
4.4.3	heavy			
5.0 FLAKE SCAR DISTAL EDGE ATTRIBUTES				
5.1	SCAR SHAPE DIST. EDGE			
5.1.1	straight dist. edge		24	50%
5.1.2	rounded dist. edge		3	25%
5.1.3	irregular dist. edge		1	25%
5.2	SCAR TERMINATION			
5.2.1	feather	X	1,3	50%
5.2.2	step	X	2,4	50%



Table 37: Individual Flake Scar Attribute Form - Experimental Specimens

- 1.0 Experimental Specimen Catalogue Number: AB10-1 (Side B)
- 1.1 Experimental Specimen Storage Location: University of Alberta
- 1.2 Lithic Raw Material Type Used: Welded Tuff from Lake Abitibi, Ont.
- 1.3 Modern Lithic Craftsman: Dr. R. Bonnicksen
- 1.4 Flake Scar Attributes
- Coded From:      Photograph(s) X      Drawing(s) X      Artifact(s) X
- 1.5 Photographic Plate Identification Number: Roll 3 A4 #35
- 1.6 Video Tape Reel Identification Number: V-22-04-001 - footage 4785
- 2.0 Description of Experiment:
- Minimal edge buffet with side of antler billet working in a direction from the base of the specimen towards the tip along the right lateral margin as shown in Figure (Side B). This experiment involves dragging the flat side of an antler across the edge of the artifact.
- 2.1 Extent of Effect: minimal - 2
- 2.2 Type of Behavior: rub buffet - 12 (edge - dulling)
- 2.3 Tool Used: hammerstone - 41
- 2.4 Total Flake Scars on Specimen: 4
- 2.5 Attributes on the following coding form are taken from Table 14:





Attributes and Attribute States	Attribute States Present on Experimental Flake Scars	#'s of Flake Scars Exhibiting Attribute State Checked in First Column	% of Relevant Scars Exhibiting Attribute State Checked in First Column
1.0 FLAKE SCAR PROXIMAL EDGE ATTRIBUTES			
1.0 FLAKE SCAR SIZE			
1.1.1 very minimal	X	all	100%
1.1.2 minimal			
1.1.3 moderate			
1.1.4 substantial			
1.1.5 very substantial			
2.0 FLAKE SCAR PROXIMAL EDGE ATTRIBUTES			
2.1 EDGE SHARPNESS			
2.1.1 sharp edge			
2.1.2 intermediate edge	X	2,3	15.38%
2.1.3 dull edge	X	1,7-8,9-13	84.61%
2.2 MARGIN DAMAGE			
2.2.1 absent			
2.2.2 light	X	2,10	15.38%
2.2.3 heavy			
2.3 MICROFLAKES			
2.3.1 absent	0		
2.3.2 light	X	2,3	15.38%
2.3.3 heavy			
2.4 PROX. EDGE MORPH.			
2.4.1 straight			



2.4.2	U shaped notch			
2.4.3	flat curved notch			
2.4.4	convex projections			
2.4.5	other	X (follows existing or original edge)		

### 3.0 FLAKE SCAR PROFILE ATTRIBUTES

3.1	PERCUSSION BULB			
3.1.1	not applicable			
3.1.2	indistinct	X	2,3	15.38%
3.1.3	distinct			
3.2	TRANSITION ANGLE			
3.2.1	not applicable			
3.2.2	gradual rise	X	2,3	15.38%
3.2.3	steep rise			
3.3	FLAKE THICKNESS			
3.3.1	not applicable			
3.3.2	thin	X	all	100%
3.3.3	thick			

### 4.0 FLAKE SCAR INTERIOR MORPHOLOGY ATTRIBUTES

4.1	RIBS			
4.1.1	absent	X		
4.1.2	limited			
4.1.3	moderate			
4.1.4	extensive			
4.1.5	very extensive			
4.2	DISTINCTIVENESS/RIBS			
4.2.1	not applicable	X		



---

4.2.2 indistinct

---

4.2.3 moderately distinct

---

4.2.4 pronounced

---

4.2.5 variable

---

4.3 RIB SPACING

---

4.3.1 not applicable X

---

4.3.2 far apt. evenly dist.

---

4.3.3 far apt. on dist. half

---

4.3.4 close, evenly dist.

---

4.3.5 close, on dist. half

---

4.3.6 variable

---

4.4 TEARING

---

4.4.1 absent X

---

4.4.2 light

---

4.4.3 heavy

---

#### 5.0 FLAKE SCAR DISTAL EDGE ATTRIBUTES

---

5.1 SCAR SHAPE DIST. EDGE

---

5.1.1 straight dist. edge

---

5.1.2 rounded dist. edge

---

5.1.3 irregular dist. edge X all 100%

---

5.2 SCAR TERMINATION

---

5.2.1 feather X 1-2,4-13 92.31%

---

5.2.2 step X 3 7.69%

---





---

EXPERIMENT AB 10-1

---

SIDE A

MINIMUM RUB BUFFET  
WITH HAMMERSTONE

SIDE B

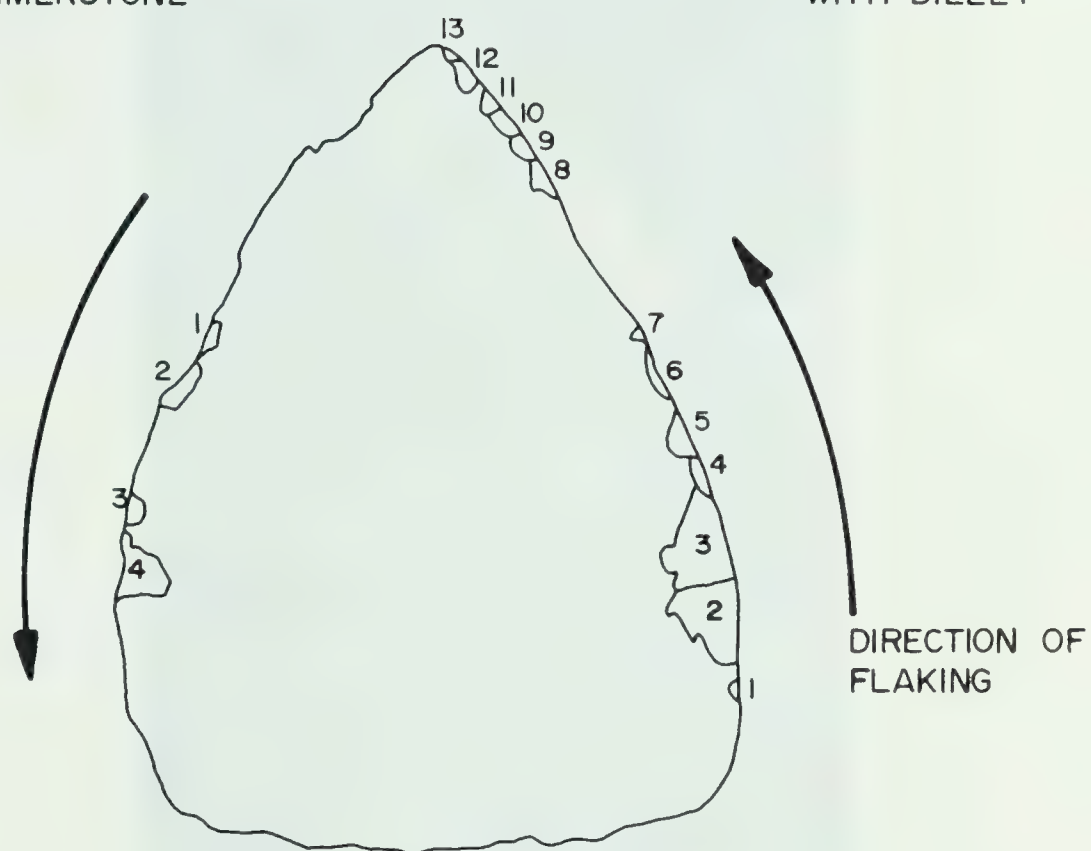
MINIMUM RUB BUFFET  
WITH BILLET

Figure 20: Line drawing of specimen AB10-1.

0 5 10 20mm





Plate 31: Photograph of Experimental Specimen AB10-1.



Table 38: Individual Flake Scar Attribute Form - Experimental Specimens

- 1.0 Experimental Specimen Catalogue Number: AB2-2 (Side A)
- 1.1 Experimental Specimen Storage Location: University of Alberta
- 1.2 Lithic Raw Material Type Used: Welded Tuff from Lake Abitibi, Ont.
- 1.3 Modern Lithic Craftsman: Dr. R. Bonnicksen
- 1.4 Flake Scar Attributes
- Coded From:      Photograph(s) X      Drawing(s) X      Artifact(s) X
- 1.5 Photographic Plate Identification Number: Roll 2, A2, 14a
- 1.6 Video Tape Reel Identification Number: V-22-04-001
- 2.0 Description of Experiment:
- Edge abrading with hammerstone along the left lateral margin with a back and forth movement (videotape footage at 4990). The experiment involves rubbing the edge of the artifact with a back and forth movement parallel to the edge using an abrasive tool such as a hammerstone.
- 2.1 Extent of Effect: minimal - 1
- 2.2 Type of Behavior: rub abrade - 11
- 2.3 Tool Used: hammerstone - 41
- 2.4 Total Flake Scars on Specimen: no scars present
- 2.5 Attributes on the following coding form are taken from Table 13:





Attributes and Attribute States	Attribute States Present on Experimental Flake Scars	#'s of Flake Scars Exhibiting Attribute State Checked in First Column	% of Relevant Scars Exhibiting Attribute State Checked in First Column
1.0 FLAKE SCAR PROXIMAL EDGE ATTRIBUTES			
1.0 FLAKE SCAR SIZE			
1.1.1 very minimal	X	all	100%
1.1.2 minimal			
1.1.3 moderate			
1.1.4 substantial			
1.1.5 very substantial			
2.0 FLAKE SCAR PROXIMAL EDGE ATTRIBUTES			
2.1 EDGE SHARPNESS			
2.1.1 sharp edge			
2.1.2 intermediate edge			
2.1.3 dull edge	X	all	100%
2.2 MARGIN DAMAGE			
2.2.1 absent	X	all	extensive grinding
2.2.2 light			
2.2.3 heavy			
2.3 MICROFLAKES			
2.3.1 absent	X	all	100%
2.3.2 light			
2.3.3 heavy			
2.4 PROX. EDGE MORPH.			



2.4.1	straight	X	all	100% follows existing edge
-------	----------	---	-----	----------------------------

2.4.2	U shaped notch			
-------	----------------	--	--	--

2.4.3	flat curved notch			
-------	-------------------	--	--	--

2.4.4	convex projections			
-------	--------------------	--	--	--

2.4.5	other			
-------	-------	--	--	--

### 3.0 FLAKE SCAR PROFILE ATTRIBUTES

#### 3.1 PERCUSSION BULB

3.1.1	not applicable	X	all	100%
-------	----------------	---	-----	------

3.1.2	indistinct			
-------	------------	--	--	--

3.1.3	distinct			
-------	----------	--	--	--

#### 3.2 TRANSITION ANGLE

3.2.1	not applicable	X	all	100%
-------	----------------	---	-----	------

3.2.2	gradual rise			
-------	--------------	--	--	--

3.2.3	steep rise			
-------	------------	--	--	--

#### 3.3 FLAKE THICKNESS

3.3.1	not applicable	X	all	100%
-------	----------------	---	-----	------

3.3.2	thin			
-------	------	--	--	--

3.3.3	thick			
-------	-------	--	--	--

### 4.0 FLAKE SCAR INTERIOR MORPHOLOGY ATTRIBUTES

#### 4.1 RIBS

4.1.1	absent	X	all	100%
-------	--------	---	-----	------

4.1.2	limited			
-------	---------	--	--	--

4.1.3	moderate			
-------	----------	--	--	--

4.1.4	extensive			
-------	-----------	--	--	--

4.1.5	very extensive			
-------	----------------	--	--	--



## 4.2 DISTINCTIVENESS/RIBS

4.2.1	not applicable	X	all	100%
-------	----------------	---	-----	------

4.2.2	indistinct			
-------	------------	--	--	--

4.2.3	moderately distinct			
-------	---------------------	--	--	--

4.2.4	pronounced			
-------	------------	--	--	--

4.2.5	variable			
-------	----------	--	--	--

## 4.3 RIB SPACING

4.3.1	not applicable	X	all	100%
-------	----------------	---	-----	------

4.3.2	far apt. evenly dist.			
-------	-----------------------	--	--	--

4.3.3	far apt. on dist. half			
-------	------------------------	--	--	--

4.3.4	close, evenly dist.			
-------	---------------------	--	--	--

4.3.5	close, on dist. half			
-------	----------------------	--	--	--

4.3.6	variable			
-------	----------	--	--	--

## 4.4 TEARING

4.4.1	absent	X	all	100%
-------	--------	---	-----	------

4.4.2	light			
-------	-------	--	--	--

4.4.3	heavy			
-------	-------	--	--	--

## 5.0 FLAKE SCAR DISTAL EDGE ATTRIBUTES

## 5.1 SCAR SHAPE DIST. EDGE

5.1.1	straight dist. edge			only produced
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5.1.2	rounded dist. edge	X	3	a few extremely
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5.1.3	irregular dist. edge			small scars
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## 5.2 SCAR TERMINATION

5.2.1	feather	X	all	100%
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5.2.2	step			
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Table 39: Individual Flake Scar Attribute Form - Experimental Specimens

- 1.0 Experimental Specimen Catalogue Number: AB2-2 (Side B)
- 1.1 Experimental Specimen Storage Location: University of Alberta
- 1.2 Lithic Raw Material Type Used: Welded Tuff from Lake Abitibi, Ont.
- 1.3 Modern Lithic Craftsman: Dr. R. Bonnicksen
- 1.4 Flake Scar Attributes

Coded From:	Photograph(s)	Drawing(s)	Artifact(s)
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- 1.5 Photographic Plate Identification Number: Roll 2, A2, 14a
- 1.6 Video Tape Reel Identification Number: V-22-04-001

## 2.0 Description of Experiment:

Uni-directional pressure rub with pressure flaker in one direction only (videotape 4838) a pressure rub involves rubbing across the edge with the tip of a pointed tool such as a pressure flaker, usually the artifact is held flat so that the pressure rub can be applied downward (Nicholas & Bonnicksen n.d.:28).

- 2.1 Extent of Effect: minimal - 2
- 2.2 Type of Behavior: pressure rub - 32
- 2.3 Tool Used: antler pressure flaker - 31
- 2.4 Total Flake Scars on Specimen: scars 1 to 5 (on Figure)
- 2.5 Attributes on the following coding form are taken from Table 14:

N.B. Rounded scars seem to be associated with feather terminations and straight scars with step terminations.



Attributes and Attribute States	Attribute States Present on Experimental Flake Scars	#'s of Flake Scars Exhibiting Attribute State Checked in First Column	% of Relevant Scars Exhibiting Attribute State Checked in First Column
1.0 FLAKE SCAR PROXIMAL EDGE ATTRIBUTES			
1.0 FLAKE SCAR SIZE			
1.1.1 very minimal			
1.1.2 minimal	X	1-5	100%
1.1.3 moderate			
1.1.4 substantial			
1.1.5 very substantial			
2.0 FLAKE SCAR PROXIMAL EDGE ATTRIBUTES			
2.1 EDGE SHARPNESS			
2.1.1 sharp edge	X	all 6	100%
2.1.2 intermediate edge			
2.1.3 dull edge			
2.2 MARGIN DAMAGE			
2.2.1 absent			
2.2.2 light			
2.2.3 heavy	X	all 6	100%
2.3 MICROFLAKES			
2.3.1 absent			
2.3.2 light			
2.3.3 heavy	X	all 6	100%
2.4 PROX. EDGE MORPH.			
2.4.1 straight			



2.4.2	U shaped notch	X	2	16.66%
2.4.3	flat curved notch			
2.4.4	convex projections	X	1,3,4,5,6	83.33%
2.4.5	other			
3.0 FLAKE SCAR PROFILE ATTRIBUTES				
3.1	PERCUSSION BULB			
3.1.1	not applicable			
3.1.2	indistinct	X	all	100%
3.1.3	distinct			
3.2	TRANSITION ANGLE			
3.2.1	not applicable			
3.2.2	gradual rise	X	all	100%
3.2.3	steep rise			
3.3	FLAKE THICKNESS			
3.3.1	not applicable			
3.3.2	thin	X	all	100%
3.3.3	thick			
4.0 FLAKE SCAR INTERIOR MORPHOLOGY ATTRIBUTES				
4.1	RIBS			
4.1.1	absent	X	all	100%
4.1.2	limited			
4.1.3	moderate			
4.1.4	extensive			
4.1.5	very extensive			
4.2	DISTINCTIVENESS/RIBS			
4.2.1	not applicable	X	all	100%









Table 40: Individual Flake Scar Attribute Form - Experimental Specimens

- 1.0 Experimental Specimen Catalogue Number: AB2-2 (Side C)
- 1.1 Experimental Specimen Storage Location: University of Alberta
- 1.2 Lithic Raw Material Type Used: Welded Tuff from Lake Abitibi, Ont.
- 1.3 Modern Lithic Craftsman: Dr. R. Bonnicksen
- 1.4 Flake Scar Attributes
- Coded From:      Photograph(s) X      Drawing(s) X      Artifact(s) X
- 1.5 Photographic Plate Identification Number: Roll 2, A2, 14a
- 1.6 Video Tape Reel Identification Number: V-22-04-001
- 2.0 Description of Experiment:
- Platform isolating with pressure rub using the tip of an antler pressure flaker (see videotape 4900). Platform isolating consists of removing material on both sides of the platform in order to better control the direction of force and the shape of the resulting flake (Nicholas & Bonnicksen n.d.:12).
- 2.1 Extent of Effect: minimal (?) - 2
- 2.2 Type of Behavior: pressure rub / platform isolating - 13
- 2.3 Tool Used: antler pressure flaker - 31
- 2.4 Total Flake Scars on Specimen: scars 7-12, total 7
- 2.5 Attributes on the following coding form are taken from Table 14:



Attributes and Attribute States	Attribute States Present on Experimental Flake Scars	#'s of Flake Scars Exhibiting Attribute State Checked in First Column	% of Relevant Scars Exhibiting Attribute State Checked in First Column
1.0 FLAKE SCAR PROXIMAL EDGE ATTRIBUTES			
1.0 FLAKE SCAR SIZE			
1.1.1 very minimal	X	7,9,12,13	57.14%
1.1.2 minimal	X	8,10,11	42.85%
1.1.3 moderate			
1.1.4 substantial			
1.1.5 very substantial			
2.0 FLAKE SCAR PROXIMAL EDGE ATTRIBUTES			
2.1 EDGE SHARPNESS			
2.1.1 sharp edge	X	all	100%
2.1.2 intermediate edge			
2.1.3 dull edge			
2.2 MARGIN DAMAGE			
2.2.1 absent or rare			
2.2.2 light			
2.2.3 heavy	X	7,8,10, 11,12,13	85.71%
2.3 MICROFLAKES			
2.3.1 absent			
2.3.2 light	X	7,8,11	42.85%
2.3.3 heavy			
2.4 PROX. EDGE MORPH.			





2.4.1	straight			
2.4.2	U shaped notch	X	6,7,8,10, 11,12,13	85.71%
2.4.3	flat curved notch			
2.4.4	convex projections			
2.4.5	other			

### 3.0 FLAKE SCAR PROFILE ATTRIBUTES

3.1	PERCUSSION BULB			
3.1.1	not applicable			
3.1.2	indistinct	X	all	100%
3.1.3	distinct			
3.2	TRANSITION ANGLE			
3.2.1	not applicable			
3.2.2	gradual rise	X	all	100%
3.2.3	steep rise			
3.3	FLAKE THICKNESS			
3.3.1	not applicable			
3.3.2	thin	X	all	100%
3.3.3	thick			

### 4.0 FLAKE SCAR INTERIOR MORPHOLOGY ATTRIBUTES

4.1	RIBS			
4.1.1	absent	X	all	100%
4.1.2	limited			
4.1.3	moderate			
4.1.4	extensive			
4.1.5	very extensive			



## 4.2 DISTINCTIVENESS/RIBS

4.2.1	not applicable	X	all	100%
-------	----------------	---	-----	------

4.2.2	indistinct			
-------	------------	--	--	--

4.2.3	moderately distinct			
-------	---------------------	--	--	--

4.2.4	pronounced			
-------	------------	--	--	--

4.2.5	variable			
-------	----------	--	--	--

## 4.3 RIB SPACING

4.3.1	not applicable	X	all	100%
-------	----------------	---	-----	------

4.3.2	far apt. evenly dist.			
-------	-----------------------	--	--	--

4.3.3	far apt. on dist. half			
-------	------------------------	--	--	--

4.3.4	close, evenly dist.			
-------	---------------------	--	--	--

4.3.5	close, on dist. half			
-------	----------------------	--	--	--

4.3.6	variable			
-------	----------	--	--	--

## 4.4 TEARING

4.4.1	absent			
-------	--------	--	--	--

4.4.2	light	X	10	14.28%
-------	-------	---	----	--------

4.4.3	heavy			
-------	-------	--	--	--

## 5.0 FLAKE SCAR DISTAL EDGE ATTRIBUTES

## 5.1 SCAR SHAPE DIST. EDGE

5.1.1	straight dist. edge		8,9,10,11,12	71.42%
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5.1.2	rounded dist. edge		13	14.28%
-------	--------------------	--	----	--------

5.1.3	irregular dist. edge		7	14.28%
-------	----------------------	--	---	--------

## 5.2 SCAR TERMINATION

5.2.1	feather		7,8	28.57%
-------	---------	--	-----	--------

5.2.2	step		9,10,11,12,13	71.42%
-------	------	--	---------------	--------



EXPERIMENT AB 2-2

SIDE A  
MINIMUM RUB  
ABRADE WITH  
HAMMERSTONE

SIDE B  
MINIMUM PRESSURE  
RUB WITH PRESSURE  
FLAKER

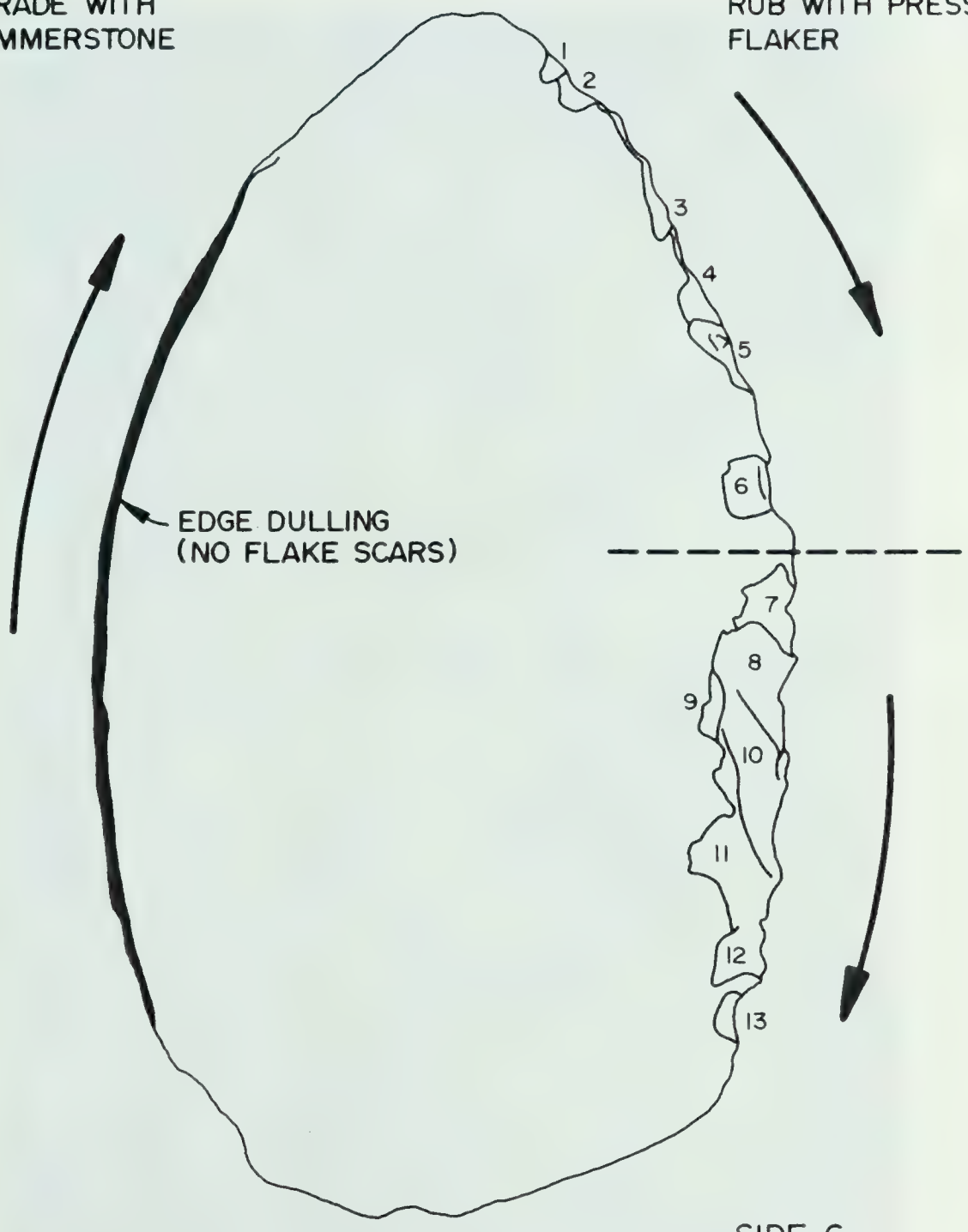


Figure 21: Line drawing of specimen AB2-2.









Plate 32: Photograph of Experimental Specimen AB2-2.



Table 41: Individual Flake Scar Attribute Form - Experimental Specimens

- 1.0 Experimental Specimen Catalogue Number: AB9-5 (Side A)
- 1.1 Experimental Specimen Storage Location: University of Alberta
- 1.2 Lithic Raw Material Type Used: Welded Tuff from Lake Abitibi, Ont.
- 1.3 Modern Lithic Craftsman: Dr. R. Bonnicksen
- 1.4 Flake Scar Attributes
- Coded From:      Photograph(s) X      Drawing(s) X      Artifact(s) X
- 1.5 Photographic Plate Identification Number: Roll 3, A3, #7
- 1.6 Video Tape Reel Identification Number: V-22-04-001

2.0 Description of Experiment:

Moderate pressure thinning/bevelling with antler pressure flaker (left lateral side) (videotape 5019-5049). Pressure is the type of force that occurs when the tip of the pointed tool is set on the edge of the artifact and then pushed either inward or downward with increasing force. Pressure thinning involves the removal of flakes from the underside of the artifact and thins the artifact more rapidly than the margins are moved in (Nicholas & Bonnicksen n.d.:28).

- 2.1 Extent of Effect: moderate - 3
- 2.2 Type of Behavior: pressure thin - 31
- 2.3 Tool Used: antler pressure flaker - 31
- 2.4 Total Flake Scars on Specimen: 9
- 2.5 Attributes on the following coding form are taken from Table 14:



Attributes and Attribute States	Attribute States Present on Experimental Flake Scars	#'s of Flake Scars Exhibiting Attribute State Checked in First Column	% of Relevant Scars Exhibiting Attribute State Checked in First Column
1.0 FLAKE SCAR PROXIMAL EDGE ATTRIBUTES			
1.0 FLAKE SCAR SIZE			
1.1.1 very minimal			
1.1.2 minimal	X	1,2,4	33.3%
1.1.3 moderate	X	3,5,6,7,8,9	66.6%
1.1.4 substantial			
1.1.5 very substantial			
2.0 FLAKE SCAR PROXIMAL EDGE ATTRIBUTES			
2.1 EDGE SHARPNESS			
2.1.1 sharp edge	X	all	100%
2.1.2 intermediate edge			
2.1.3 dull edge			
2.2 MARGIN DAMAGE			
2.2.1 absent	X	1,4	22.2%
2.2.2 light			
2.2.3 heavy			
2.3 MICROFLAKES			
2.3.1 absent	X		100%
2.3.2 light			
2.3.3 heavy			
2.4 PROX. EDGE MORPH.			
2.4.1 straight			





2.4.2	U shaped notch	X	3,4,5,6,7,8,9	77.7%
2.4.3	flat curved notch	X	1,2	22.2% failed scars
2.4.4	convex projections			
2.4.5	other			
3.0 FLAKE SCAR PROFILE ATTRIBUTES				
3.1	PERCUSSION BULB			
3.1.1	not applicable			
3.1.2	indistinct	X	all	100%
3.1.3	distinct			
3.2	TRANSITION ANGLE			
3.2.1	not applicable			
3.2.2	gradual rise	X	all	100%
3.2.3	steep rise			
3.3	FLAKE THICKNESS			
3.3.1	not applicable			
3.3.2	thin	X	all	100%
3.3.3	thick			
4.0 FLAKE SCAR INTERIOR MORPHOLOGY ATTRIBUTES				
4.1	RIBS			
4.1.1	absent	X	3,8	22.2%
4.1.2	limited			only visible
4.1.3	moderate			by rotating
4.1.4	extensive			specimen at
4.1.5	very extensive			an angle in strong light



## 4.2 DISTINCTIVENESS/RIBS

4.2.1 not applicable

4.2.2 indistinct	X	3,8	22.8%
------------------	---	-----	-------

4.2.3 moderately distinct

4.2.4 pronounced

4.2.5 variable

## 4.3 RIB SPACING

4.3.1 not applicable

4.3.2 far apt. evenly dist.

4.3.3 far apt. on dist. half

4.3.4 close, evenly dist.

4.3.5 close, on dist. half	X	3,8	22.2%
----------------------------	---	-----	-------

4.3.6 variable

## 4.4 TEARING

4.4.1 absent	X	all	100%
--------------	---	-----	------

4.4.2 light

4.4.3 heavy

## 5.0 FLAKE SCAR DISTAL EDGE ATTRIBUTES

## 5.1 SCAR SHAPE DIST. EDGE

5.1.1 straight dist. edge	X	2,4,6,8,9	55.6%
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5.1.2 rounded dist. edge	X	3	11.1%
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5.1.3 irregular dist. edge	X	1,5,7	33.3%
----------------------------	---	-------	-------

## 5.2 SCAR TERMINATION

5.2.1 feather	X	1,2,3,4,6,7,8	77.8%
---------------	---	---------------	-------

5.2.2 step	X	5,9	22.2% (due to preform)
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Table 42: Individual Flake Scar Attribute Form - Experimental Specimens

- 1.0 Experimental Specimen Catalogue Number: AB9-5 (Side B)
- 1.1 Experimental Specimen Storage Location: University of Alberta
- 1.2 Lithic Raw Material Type Used: Welded Tuff from Lake Abitibi, Ont.
- 1.3 Modern Lithic Craftsman: Dr. R. Bonnicksen
- 1.4 Flake Scar Attributes
- Coded From:      Photograph(s) X      Drawing(s) X      Artifact(s) X
- 1.5 Photographic Plate Identification Number: Roll 3, A3, #7
- 1.6 Video Tape Reel Identification Number: V-22-04-001
- 2.0 Description of Experiment:
- Minimum pressure thin with pressure flaker (right lateral side) (videotape 5019-5049).
- 2.1 Extent of Effect: minimum
- 2.2 Type of Behavior: pressure thin
- 2.3 Tool Used: antler pressure flaker
- 2.4 Total Flake Scars on Specimen: 12 (one isolated interior scar not counted)
- 2.5 Attributes on the following coding form are taken from Table 14:





Attributes and Attribute States	Attribute States Present on Experimental Flake Scars	#'s of Flake Scars Exhibiting Attribute State Checked in First Column	% of Relevant Scars Exhibiting Attribute State Checked in First Column
1.0 FLAKE SCAR PROXIMAL EDGE ATTRIBUTES			
1.0 FLAKE SCAR SIZE			
1.1.1 very minimal		9,12	16.6%
1.1.2 minimal		1,2,3,4,7, 8,10,11	66.6%
1.1.3 moderate		5,6	16.6%
1.1.4 substantial			
1.1.5 very substantial			
2.0 FLAKE SCAR PROXIMAL EDGE ATTRIBUTES			
2.1 EDGE SHARPNESS			
2.1.1 sharp edge	X	all	100%
2.1.2 intermediate edge			
2.1.3 dull edge			
2.2 MARGIN DAMAGE			
2.2.1 absent			
2.2.2 light	X	1,2	16.6%
2.2.3 heavy			
2.3 MICROFLAKES			
2.3.1 absent	X	all	100%
2.3.2 light			
2.3.3 heavy			
2.4 PROX. EDGE MORPH.			



2.4.1	straight			
2.4.2	U shaped notch	X	all	100%
2.4.3	flat curved notch			
2.4.4	convex projections			
2.4.5	other			

### 3.0 FLAKE SCAR PROFILE ATTRIBUTES

3.1	PERCUSSION BULB			
3.1.1	not applicable			
3.1.2	indistinct	X	all	100%
3.1.3	distinct			
3.2	TRANSITION ANGLE			
3.2.1	not applicable			
3.2.2	gradual rise	X	all	100%
3.2.3	steep rise			
3.3	FLAKE THICKNESS			
3.3.1	not applicable			
3.3.2	thin	X	all	100%
3.3.3	thick			

### 4.0 FLAKE SCAR INTERIOR MORPHOLOGY ATTRIBUTES

4.1	RIBS			
4.1.1	absent			
4.1.2	limited	X	5,6,7	25%
4.1.3	moderate			do not put
4.1.4	extensive			on master
4.1.5	very extensive			chart



## 4.2 DISTINCTIVENESS/RIBS

4.2.1 not applicable

4.2.2 indistinct	X	5,6,7	25%
------------------	---	-------	-----

4.2.3 moderately distinct

4.2.4 pronounced

4.2.5 variable

## 4.3 RIB SPACING

4.3.1 not applicable

4.3.2 far apt. evenly dist.

4.3.3 far apt. on dist. half

4.3.4 close, evenly dist.

4.3.5 close, on dist. half	X	5,6,7	25%
----------------------------	---	-------	-----

4.3.6 variable

## 4.4 TEARING

4.4.1 absent	X	all	100%
--------------	---	-----	------

4.4.2 light

4.4.3 heavy

## 5.0 FLAKE SCAR DISTAL EDGE ATTRIBUTES

## 5.1 SCAR SHAPE DIST. EDGE

5.1.1 straight dist. edge		2,6,8,9, 10,11,12	58.3%
---------------------------	--	----------------------	-------

5.1.2 rounded dist. edge

5.1.3 irregular dist. edge		1,3,4,5,7	41.7%
----------------------------	--	-----------	-------

## 5.2 SCAR TERMINATION

5.2.1 feather	X	3,5,7,8,11	41.6%
---------------	---	------------	-------

5.2.2 step	X	1,2,4,6,9, 10,12	58.4% (some failed scars)
------------	---	---------------------	---------------------------------





---

EXPERIMENT AB 9-5

---

SIDE A

MODERATE PRESSURE  
THINNING WITH  
PRESSURE FLAKER

SIDE B

MINIMUM PRESSURE  
THINNING WITH  
PRESSURE FLAKER

Figure 22: Line drawing of specimen AB9-5.

0 5 10 20mm





Plate 33: Photograph of Experimental Specimen AB9-5.



Table 43: Individual Flake Scar Attribute Form - Experimental Specimens

- 1.0 Experimental Specimen Catalogue Number: AB16-7(a)
- 1.1 Experimental Specimen Storage Location: University of Alberta
- 1.2 Lithic Raw Material Type Used: Welded Tuff from Lake Abitibi, Ont.
- 1.3 Modern Lithic Craftsman: Dr. R. Bonnicksen
- 1.4 Flake Scar Attributes

Coded From:      Photograph(s) X      Drawing(s) X      Artifact(s) X

- 1.5 Photographic Plate Identification Number: Roll 3, A3, #1
- 1.6 Video Tape Reel Identification Number: V-22-04-001

## 2.0 Description of Experiment:

Moderate percussion thinning with a hammerstone. Side A (left lateral margin) has a large number of failed scars (i.e., failed platforms, etc.) (videotape 3942' to 3975'). Percussion flaking consists of a series of rapid blows to the edge of the artifact with a hammerstone or other percussor. The intent is to thin the specimen not move in or regularize the artifact edge.

- 2.1 Extent of Effect: moderate 3
- 2.2 Type of Behavior: percussion thin - 41
- 2.3 Tool Used: hammerstone - 41
- 2.4 Total Flake Scars on Specimen: 5 (selected from both sides; see drawing)
- 2.5 Attributes on the following coding form are taken from Table 14:





Attributes and Attribute States	Attribute States Present on Experimental Flake Scars	#'s of Flake Scars Exhibiting Attribute State Checked in First Column	% of Relevant Scars Exhibiting Attribute State Checked in First Column
1.0 FLAKE SCAR PROXIMAL EDGE ATTRIBUTES			
1.0 FLAKE SCAR SIZE			
1.1.1 very minimal			
1.1.2 minimal			
1.1.3 moderate	X	1,3,5	60%
1.1.4 substantial	X	24	40%
1.1.5 very substantial			
2.0 FLAKE SCAR PROXIMAL EDGE ATTRIBUTES			
2.1 EDGE SHARPNESS			
2.1.1 sharp edge	X	all	100%
2.1.2 intermediate edge			
2.1.3 dull edge			
2.2 MARGIN DAMAGE			
2.2.1 absent	0	X	not much on selected scars
2.2.2 light			(failed scars have a lot of edge
2.2.3 heavy			damage)
2.3 MICROFLAKES			
2.3.1 absent			
2.3.2 light	X	2,4	40%
2.3.3 heavy			



## 2.4 PROX. EDGE MORPH.

2.4.1 straight

2.4.2 U shaped notch

2.4.3 flat curved notch	X	1,2,4,5	100% as platform for
-------------------------	---	---------	----------------------

2.4.4 convex projections			#3 has been destroyed
--------------------------	--	--	-----------------------

2.4.5 other

## 3.0 FLAKE SCAR PROFILE ATTRIBUTES

3.1 PERCUSSION BULB

3.1.1 not applicable

3.1.2 indistinct	X	all	100%
------------------	---	-----	------

3.1.3 distinct

3.2 TRANSITION ANGLE

3.2.1 not applicable

3.2.2 gradual rise	X	all	100%
--------------------	---	-----	------

3.2.3 steep rise

3.3 FLAKE THICKNESS

3.3.1 not applicable

3.3.2 thin	X	1,2,3,5	80%
------------	---	---------	-----

3.3.3 thick	X	4	20%
-------------	---	---	-----

## 4.0 FLAKE SCAR INTERIOR MORPHOLOGY ATTRIBUTES

4.1 RIBS

4.1.1 absent

4.1.2 limited			all difficult to see,
---------------	--	--	-----------------------

4.1.3 moderate			(may be some terracing or
----------------	--	--	---------------------------



4.1.4	extensive	X	1,3,4,5(?)	planes in lithic
4.1.5	very extensive			material effect)
4.2	DISTINCTIVENESS/RIBS			
4.2.1	not applicable			
4.2.2	indistinct	X	all	?
4.2.3	moderately distinct			
4.2.4	pronounced			
4.2.5	variable			
4.3	RIB SPACING			
4.3.1	not applicable			
4.3.2	far apt. evenly dist.	X	all	?
4.3.3	far apt. on dist. half			
4.3.4	close, evenly dist.			
4.3.5	close, on dist. half			
4.3.6	variable			
4.4	TEARING			
4.4.1	absent			
4.4.2	light	X	2,4	40%
4.4.3	heavy			
5.0 FLAKE SCAR DISTAL EDGE ATTRIBUTES				
5.1	SCAR SHAPE DIST. EDGE			
5.1.1	straight dist. edge	1,3,4,		60%
5.1.2	rounded dist. edge	2,5		40%
5.1.3	irregular dist. edge			predominantly straight on failed scars





5.2 SCAR TERMINATION

5.2.1	feather	1,2	40%
5.2.2	step	3,4,5	60% predomin- antly step on failed scars



Table 44: Individual Flake Scar Attribute Form - Experimental Specimens

- 1.0 Experimental Specimen Catalogue Number: AB16-7(B)
- 1.1 Experimental Specimen Storage Location: University of Alberta
- 1.2 Lithic Raw Material Type Used: Welded Tuff from Lake Abitibi, Ont.
- 1.3 Modern Lithic Craftsman: Dr. R. Bonnicksen
- 1.4 Flake Scar Attributes

Coded From:      Photograph(s) X      Drawing(s) X      Artifact(s)

- 1.5 Photographic Plate Identification Number: Roll 3, A3 - #1
- 1.6 Video Tape Reel Identification Number: V-22-04-001

2.0 Description of Experiment:

Minimum percussion thinning with a hammerstone. Flakes selected from both sides of artifact (see drawing) (videotape 3942 to 3975).

- 2.1 Extent of Effect: minimal
- 2.2 Type of Behavior: percussion thin
- 2.3 Tool Used: hammerstone
- 2.4 Total Flake Scars on Specimen: 6 (selected from both sides - see drawing)
- 2.5 Attributes on the following coding form are taken from Table 14:



Attributes and Attribute States	Attribute States Present on Experimental Flake Scars	#'s of Flake Scars Exhibiting Attribute State Checked in First Column	% of Relevant Scars Exhibiting Attribute State Checked in First Column
1.0 FLAKE SCAR PROXIMAL EDGE ATTRIBUTES			
1.0 FLAKE SCAR SIZE			
1.1.1 very minimal			
1.1.2 minimal	X	all	100%
1.1.3 moderate			
1.1.4 substantial			
1.1.5 very substantial			
2.0 FLAKE SCAR PROXIMAL EDGE ATTRIBUTES			
2.1 EDGE SHARPNESS			
2.1.1 sharp edge	X	all	100%
2.1.2 intermediate edge			
2.1.3 dull edge			
2.2 MARGIN DAMAGE			
2.2.1 absent			
2.2.2 light			
2.2.3 heavy	X	1,3,5,6	66%
2.3 MICROFLAKES			
2.3.1 absent			
2.3.2 light			
2.3.3 heavy	X	1,3,5	50%
2.4 PROX. EDGE MORPH.			
2.4.1 straight	X	2,4,6	50%





---

2.4.2 U shaped notch

---

2.4.3 flat curved notch

---

2.4.4 convex projections X 1,3,5 50%

---

2.4.5 other

---

### 3.0 FLAKE SCAR PROFILE ATTRIBUTES

---

3.1 PERCUSSION BULB

---

3.1.1 not applicable

---

3.1.2 indistinct X all 100%

---

3.1.3 distinct

---

3.2 TRANSITION ANGLE

---

3.2.1 not applicable

---

3.2.2 gradual rise X all 100%

---

3.2.3 steep rise

---

3.3 FLAKE THICKNESS

---

3.3.1 not applicable

---

3.3.2 thin X all 100%

---

3.3.3 thick

---

### 4.0 FLAKE SCAR INTERIOR MORPHOLOGY ATTRIBUTES

---

4.1 RIBS

---

4.1.1 absent X all 100%

---

4.1.2 limited

---

4.1.3 moderate

---

4.1.4 extensive

---

4.1.5 very extensive

---

4.2 DISTINCTIVENESS/RIBS

---

4.2.1 not applicable X all 100%

---



---

4.2.2 indistinct

---

4.2.3 moderately distinct

---

4.2.4 pronounced

---

4.2.5 variable

---

4.3 RIB SPACING

---

4.3.1 not applicable	X	all	100%
----------------------	---	-----	------

---

4.3.2 far apt. evenly dist.

---

4.3.3 far apt. on dist. half

---

4.3.4 close, evenly dist.

---

4.3.5 close, on dist. half

---

4.3.6 variable

---

4.4 TEARING

---

4.4.1 absent	X	all	100%
--------------	---	-----	------

---

4.4.2 light

---

4.4.3 heavy

---

## 5.0 FLAKE SCAR DISTAL EDGE ATTRIBUTES

---

5.1 SCAR SHAPE DIST. EDGE

---

5.1.1 straight dist. edge	X	2,4,5	50%
---------------------------	---	-------	-----

---

5.1.2 rounded dist. edge	X	1,3,6	50%
--------------------------	---	-------	-----

---

5.1.3 irregular dist. edge

---

5.2 SCAR TERMINATION

---

5.2.1 feather	X	1	16.6%
---------------	---	---	-------

---

5.2.2 step	X	2,3,4,5,6	83.3%
------------	---	-----------	-------

---



---

EXPERIMENT AB 16-7

---

1. MINIMUM PERCUSSION THIN WITH HAMMERSTONE  
(SCARS MARKED Mi-1, etc.)
2. MODERATE PERCUSSION THIN WITH HAMMERSTONE  
(SCARS MARKED Mo1, etc.)

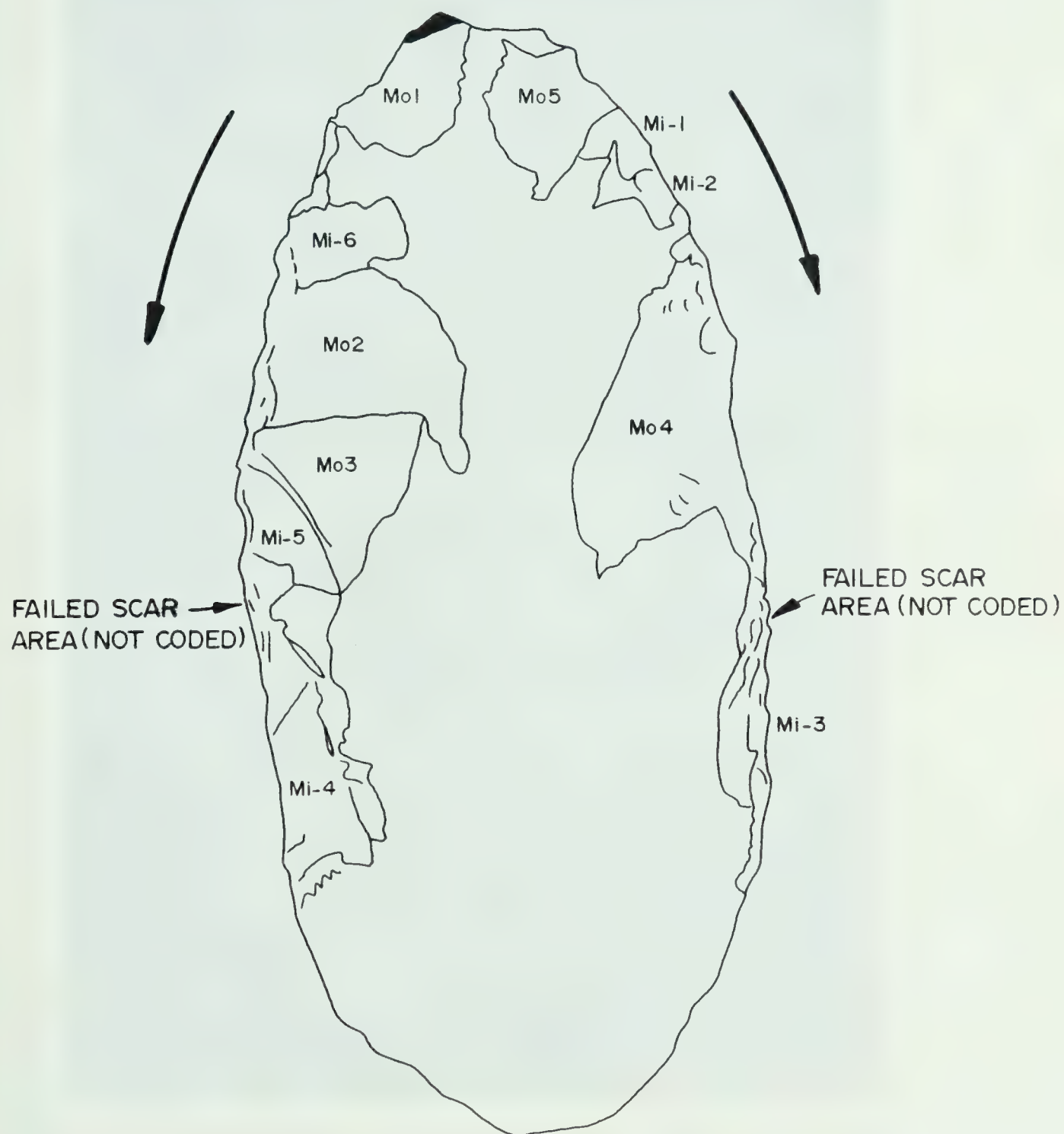


Figure 23: Line drawing of specimen AB16-7.

0 10 20 30mm







Plate 34: Photograph of Experimental Specimen AB16-7.



Table 45: Individual Flake Scar Attribute Form - Experimental Specimens

- 1.0 Experimental Specimen Catalogue Number: AB5-9 (right margin)  
(Side B)
- 1.1 Experimental Specimen Storage Location: University of Alberta
- 1.2 Lithic Raw Material Type Used: Welded Tuff from Lake Abitibi, Ont.
- 1.3 Modern Lithic Craftsman: Dr. R. Bonnicksen
- 1.4 Flake Scar Attributes
- Coded From:      Photograph(s) X      Drawing(s) X      Artifact(s) X
- 1.5 Photographic Plate Identification Number: Roll 2, A2 #8A
- 1.6 Video Tape Reel Identification Number: V-22-04-001
- 2.0 Description of Experiment:

Moderate percussion thinning with an antler billet. Scars on the right lateral margin of the flaked face were used (videotape 5242-5327). Percussion flaking involves the use of fairly rapid blows to the edge of the artifact with an antler billet. The object is to thin material from the artifact face rather than to move in or regularize the edge. Minimum percussion flaking either hard or soft hammer does not seem productive for this purpose (see note below).

- 2.1 Extent of Effect: moderate - 3
- 2.2 Type of Behavior: percussion thin - 41
- 2.3 Tool Used: billet - 51
- 2.4 Total Flake Scars on Specimen: 5 used (8 failed or overlapped scars not used)
- 2.5 Attributes on the following coding form are taken from Table 14:

N.B.

As with the minimum percussion thin with hammerstone (experiment AB16-7), the minimum percussion thin with a billet was also generally unsatisfactory. Minimal effects in both cases produced platform crushing, extensive hinge fracturing, and small stepped flake terminations which are difficult to tell apart. This being the case, minimal percussion may not have been extensively used by prehistoric peoples utilizing this material.



Attributes and Attribute States	Attribute States Present on Experimental Flake Scars	#'s of Flake Scars Exhibiting Attribute State Checked in First Column	% of Relevant Scars Exhibiting Attribute State Checked in First Column
1.0 FLAKE SCAR PROXIMAL EDGE ATTRIBUTES			
1.0 FLAKE SCAR SIZE			
1.1.1 very minimal			
1.1.2 minimal			
1.1.3 moderate	X	4,5	40%
1.1.4 substantial	X	1,2,3	60%
1.1.5 very substantial			
2.0 FLAKE SCAR PROXIMAL EDGE ATTRIBUTES			
2.1 EDGE SHARPNESS			
2.1.1 sharp edge	X	all	100%
2.1.2 intermediate edge			
2.1.3 dull edge			
2.2 MARGIN DAMAGE			
2.2.1 absent			
2.2.2 light	X	8,4,5	60% (failed scars have heavy margin damage)
2.2.3 heavy			
2.3 MICROFLAKES			
2.3.1 absent			
2.3.2 light	X	4,5	40%
2.3.3 heavy			







## 2.4 PROX. EDGE MORPH.

2.4.1 straight

2.4.2 U shaped notch

2.4.3 flat curved notch X 1,2,3,4 80% (100%)

2.4.4 convex projections #5 destroyed

2.4.5 other

## 3.0 FLAKE SCAR PROFILE ATTRIBUTES

## 3.1 PERCUSSION BULB

3.1.1 not applicable

3.1.2 indistinct X 1,2,3,5 80%

3.1.3 distinct X 4 20%

## 3.2 TRANSITION ANGLE

3.2.1 not applicable

3.2.2 gradual rise X 1,2,3,5 80%

3.2.3 steep rise X 4 20%

## 3.3 FLAKE THICKNESS

3.3.1 not applicable

3.3.2 thin X 1,2,3,5 80%

3.3.3 thick X 4 20%

## 4.0 FLAKE SCAR INTERIOR MORPHOLOGY ATTRIBUTES

## 4.1 RIBS

4.1.1 absent

4.1.2 limited X 1,2 20%

4.1.3 moderate

N.B. The best flake examples have a distinct percussion bulb with a steep rise and a curved flake scar bottom with indistinct ribs relatively far apart in distal half.



4.1.4	extensive			
4.1.5	very extensive			
4.2	DISTINCTIVENESS/RIBS			
4.2.1	not applicable			
4.2.2	indistinct	X	1,2	20%
4.2.3	moderately distinct			
4.2.4	pronounced			
4.2.5	variable			
4.3	RIB SPACING			
4.3.1	not applicable			
4.3.2	far apt. evenly dist.			
4.3.3	far apt. on dist. half	X	1,2	20%
4.3.4	close, evenly dist.			
4.3.5	close, on dist. half			
4.3.6	variable			
4.4	TEARING			
4.4.1	absent			
4.4.2	light	X	1	20%
4.4.3	heavy			(very indistinct)
5.0 FLAKE SCAR DISTAL EDGE ATTRIBUTES				
5.1	SCAR SHAPE DIST. EDGE			
5.1.1	straight dist. edge	X	1,3,5	60%
5.1.2	rounded dist. edge	X	24	40%
5.1.3	irregular dist. edge			
5.2	SCAR TERMINATION			
5.2.1	feather	X	1,4,2	50%



---

5.2.2	step	X	3,5,2	50%
				#2 has feather and step both

---





Table 46: Individual Flake Scar Attribute Form - Experimental Specimens

- 1.0 Experimental Specimen Catalogue Number: AB5-9 left margin (Side A)
- 1.1 Experimental Specimen Storage Location: University of Alberta
- 1.2 Lithic Raw Material Type Used: Welded Tuff from Lake Abitibi, Ont.
- 1.3 Modern Lithic Craftsman: Dr. R. Bonnicksen
- 1.4 Flake Scar Attributes

Coded From:      Photograph(s) X      Drawing(s) X      Artifact(s)

- 1.5 Photographic Plate Identification Number: Roll 2, A2, #8a
- 1.6 Video Tape Reel Identification Number: V-22-04-001

## 2.0 Description of Experiment:

Minimal percussion thinning with an antler billet scars on the left lateral margin (Side A) were used (videotape 5242-5327).

- 2.1 Extent of Effect: minimal - 2
- 2.2 Type of Behavior: percussion thin - 41
- 2.3 Tool Used: billet - 51
- 2.4 Total Flake Scars on Specimen: 9 used
- 2.5 Attributes on the following coding form are taken from Table 14:



Attributes and Attribute States	Attribute States Present on Experimental Flake Scars	#'s of Flake Scars Exhibiting Attribute State Checked in First Column	% of Relevant Scars Exhibiting Attribute State Checked in First Column
1.0 FLAKE SCAR PROXIMAL EDGE ATTRIBUTES			
1.0 FLAKE SCAR SIZE			
1.1.1 very minimal			
1.1.2 minimal	X	all	77.8%
1.1.3 moderate	X	5,2	22.2%
1.1.4 substantial			
1.1.5 very substantial			
2.0 FLAKE SCAR PROXIMAL EDGE ATTRIBUTES			
2.1 EDGE SHARPNESS			
2.1.1 sharp edge	X	all	100%
2.1.2 intermediate edge			
2.1.3 dull edge			
2.2 MARGIN DAMAGE			
2.2.1 absent			
2.2.2 light			
2.2.3 heavy	X	all	100%
2.3 MICROFLAKES			
2.3.1 absent			
2.3.2 light			
2.3.3 heavy	X	all	100%
2.4 PROX. EDGE MORPH.			
2.4.1 straight			



2.4.2	U shaped notch			
2.4.3	flat curved notch			
2.4.4	convex projections	X	all	100%
2.4.5	other			
3.0 FLAKE SCAR PROFILE ATTRIBUTES				
3.1	PERCUSSION BULB			
3.1.1	not applicable			
3.1.2	indistinct	X	all	100%
3.1.3	distinct			
3.2	TRANSITION ANGLE			
3.2.1	not applicable			
3.2.2	gradual rise	X	all	100%
3.2.3	steep rise			
3.3	FLAKE THICKNESS			
3.3.1	not applicable			
3.3.2	thin		1,2,4-9	88.9%
3.3.3	thick		#3	11.1% (this is a failed scar)
4.0 FLAKE SCAR INTERIOR MORPHOLOGY ATTRIBUTES				
4.1	RIBS			
4.1.1	absent	X	all	100%
4.1.2	limited			
4.1.3	moderate			
4.1.4	extensive			
4.1.5	very extensive			





## 4.2 DISTINCTIVENESS/RIBS

4.2.1	not applicable	X	all	100%
4.2.2	indistinct			
4.2.3	moderately distinct			
4.2.4	pronounced			
4.2.5	variable			

## 4.3 RIB SPACING

4.3.1	not applicable	X	all	100%
4.3.2	far apt. evenly dist.			
4.3.3	far apt. on dist. half			
4.3.4	close, evenly dist.			
4.3.5	close, on dist. half			
4.3.6	variable			

## 4.4 TEARING

4.4.1	absent			
4.4.2	light	X	4	11.1% (this scar is more mod. than min.)
4.4.3	heavy			

## 5.0 FLAKE SCAR DISTAL EDGE ATTRIBUTES

## 5.1 SCAR SHAPE DIST. EDGE

5.1.1	straight dist. edge		2,3	22.2%
5.1.2	rounded dist. edge		4,6,9	33.33%
5.1.3	irregular dist. edge		1,5,7,8	44.4%

## 5.2 SCAR TERMINATION

5.2.1	feather		4,6,7,8,9	55.5%
5.2.2	step		1,2,3,5	44.4%



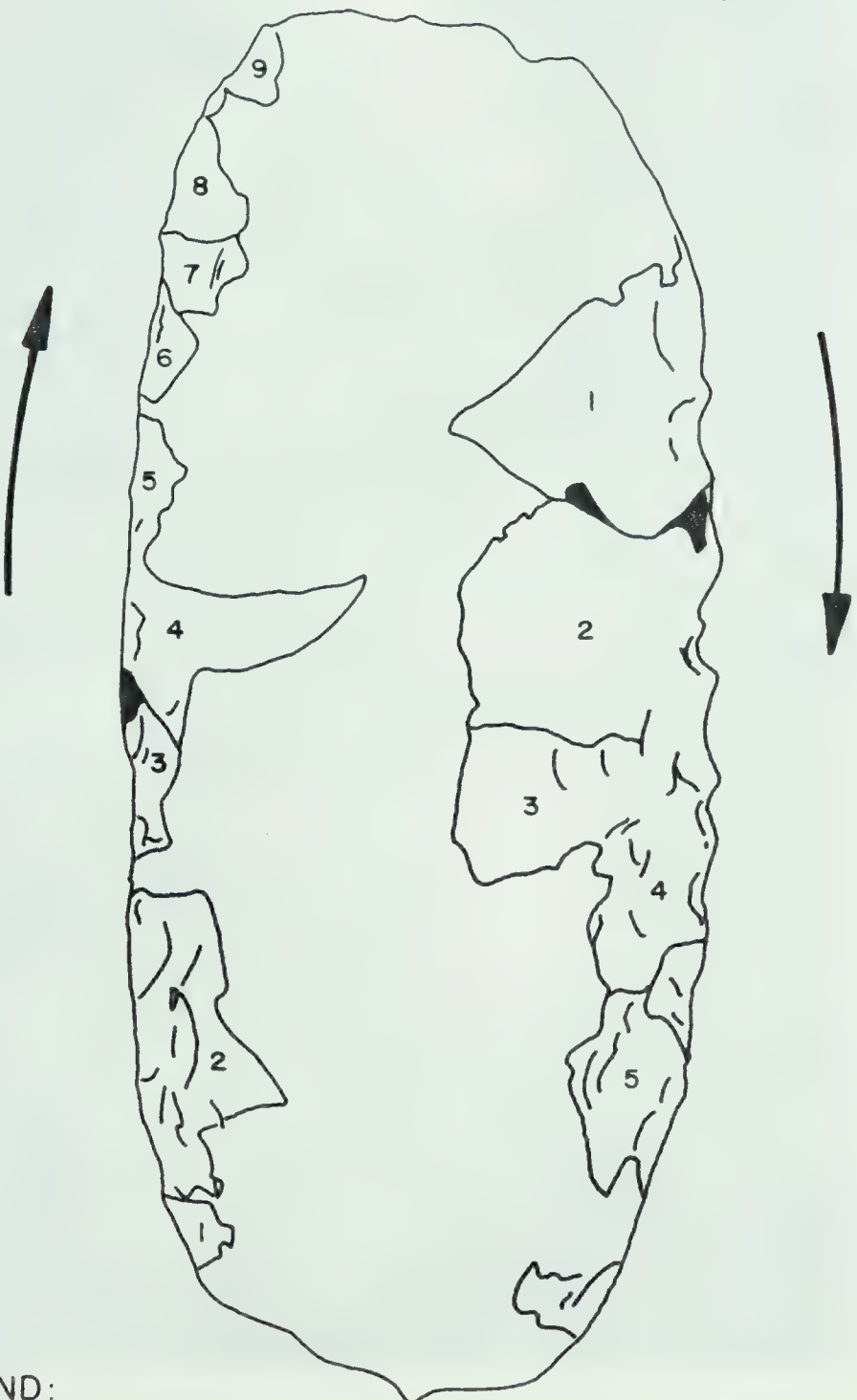
EXPERIMENT AB 5-9

SIDE A

MINIMUM PERCUSSION THIN  
WITH BILLET

SIDE B

MODERATE PERCUSSION  
THIN WITH BILLET



LEGEND:

■ ... ORIGINAL SURFACE REMAINS IN FLAKED AREA

Figure 24: Line drawing of specimen AB5-9.

0 10 20 40mm





Plate 35: Photograph of Experimental Specimen AB5-9.





Table 47: Individual Flake Scar Attribute Form - Experimental Specimens

1.0 Experimental Specimen Catalogue Number: AB7-10

1.1 Experimental Specimen Storage Location: University of Alberta

1.2 Lithic Raw Material Type Used: Welded Tuff from Lake Abitibi, Ont.

1.3 Modern Lithic Craftsman: Dr. R. Bonnicksen

1.4 Flake Scar Attributes

Coded From:      Photograph(s) X      Drawing(s) X      Artifact(s) X

1.5 Photographic Plate Identification Number: Roll 2, A2, #3A

1.6 Video Tape Reel Identification Number: V-22-04-001

2.0 Description of Experiment:

Substantial percussion thin with billet (some edge abrading was done in preparation for the soft hammer percussion flaking (videotape 5327). This material is at the coarse end of the range found at the aboriginal quarry, and therefore, some attributes such as ribs may not translate well.

2.1 Extent of Effect: substantial - 4

2.2 Type of Behavior: percussion thin - 51

2.3 Tool Used: billet 51 (medium size)

2.4 Total Flake Scars on Specimen: 4 used

2.5 Attributes on the following coding form are taken from Table 14:





Attributes and Attribute States	Attribute States Present on Experimental Flake Scars	#'s of Flake Scars Exhibiting Attribute State Checked in First Column	% of Relevant Scars Exhibiting Attribute State Checked in First Column
1.0 FLAKE SCAR PROXIMAL EDGE ATTRIBUTES			
1.0 FLAKE SCAR SIZE			
1.1.1 very minimal			
1.1.2 minimal			
1.1.3 moderate			
1.1.4 substantial	X	2,3	50%
1.1.5 very substantial	X	1,4	50%
2.0 FLAKE SCAR PROXIMAL EDGE ATTRIBUTES			
2.1 EDGE SHARPNESS			
2.1.1 sharp edge	X	1,2,3,4	100%
2.1.2 intermediate edge			
2.1.3 dull edge			
2.2 MARGIN DAMAGE			
2.2.1 absent			
2.2.2 light	X	2,3	50%
2.2.3 heavy			(coarseness of material may have enhanced damage)
2.3 MICROFLAKES			
2.3.1 absent	X	all	(a few indistinct ones may be present)



2.3.2	light			
2.3.3	heavy			
2.4	PROX. EDGE MORPH.			
2.4.1	straight			
2.4.2	U shaped notch			
2.4.3	flat curved notch	X	2,3,4	75%
2.4.4	convex projections			25% irregular due to platform collapse
2.4.5	other			

### 3.0 FLAKE SCAR PROFILE ATTRIBUTES

3.1	PERCUSSION BULB			
3.1.1	not applicable			
3.1.2	indistinct	X	1,2,4	75%
3.1.3	distinct	X	3	25%
3.2	TRANSITION ANGLE			
3.2.1	not applicable			
3.2.2	gradual rise	X	1,2,4	75%
3.2.3	steep rise	X	3	25%
3.3	FLAKE THICKNESS			
3.3.1	not applicable			
3.3.2	thin	X	1,2	50%
3.3.3	thick	X	4,3	50%

### 4.0 FLAKE SCAR INTERIOR MORPHOLOGY ATTRIBUTES

4.1	RIBS			
4.1.1	absent			



4.1.2	limited			
4.1.3	moderate	X	1,4	50% (hard to see due to coarse material)
4.1.4	extensive			
4.1.5	very extensive			
4.2	DISTINCTIVENESS/RIBS			
4.2.1	not applicable			
4.2.2	indistinct	X	1,4	50%
4.2.3	moderately distinct			
4.2.4	pronounced			
4.2.5	variable			
4.3	RIB SPACING			
4.3.1	not applicable			
4.3.2	far apt. evenly dist.			
4.3.3	far apt. on dist. half	X	1,4	50%
4.3.4	close, evenly dist.			
4.3.5	close, on dist. half			
4.3.6	variable			
4.4	TEARING			
4.4.1	absent			
4.4.2	light	X	3	25%
4.4.3	heavy			
5.0 FLAKE SCAR DISTAL EDGE ATTRIBUTES				
5.1	SCAR SHAPE DIST. EDGE			
5.1.1	straight dist. edge			





5.1.2	rounded dist. edge	X	3,4	50%
5.1.3	irregular dist. edge	X	1,4	50%
5.2	SCAR TERMINATION			
5.2.1	feather	X	1	25%
5.2.2	step	X	2,3,4	75%



---

EXPERIMENT AB 7-10

---

## SUBSTANTIAL PERCUSSION THIN WITH BILLET

LEGEND:

■ ...ORIGINAL PREFORM SURFACE REMAINS IN FLAKED AREA

Figure 25: Line drawing of specimen AB7-10.



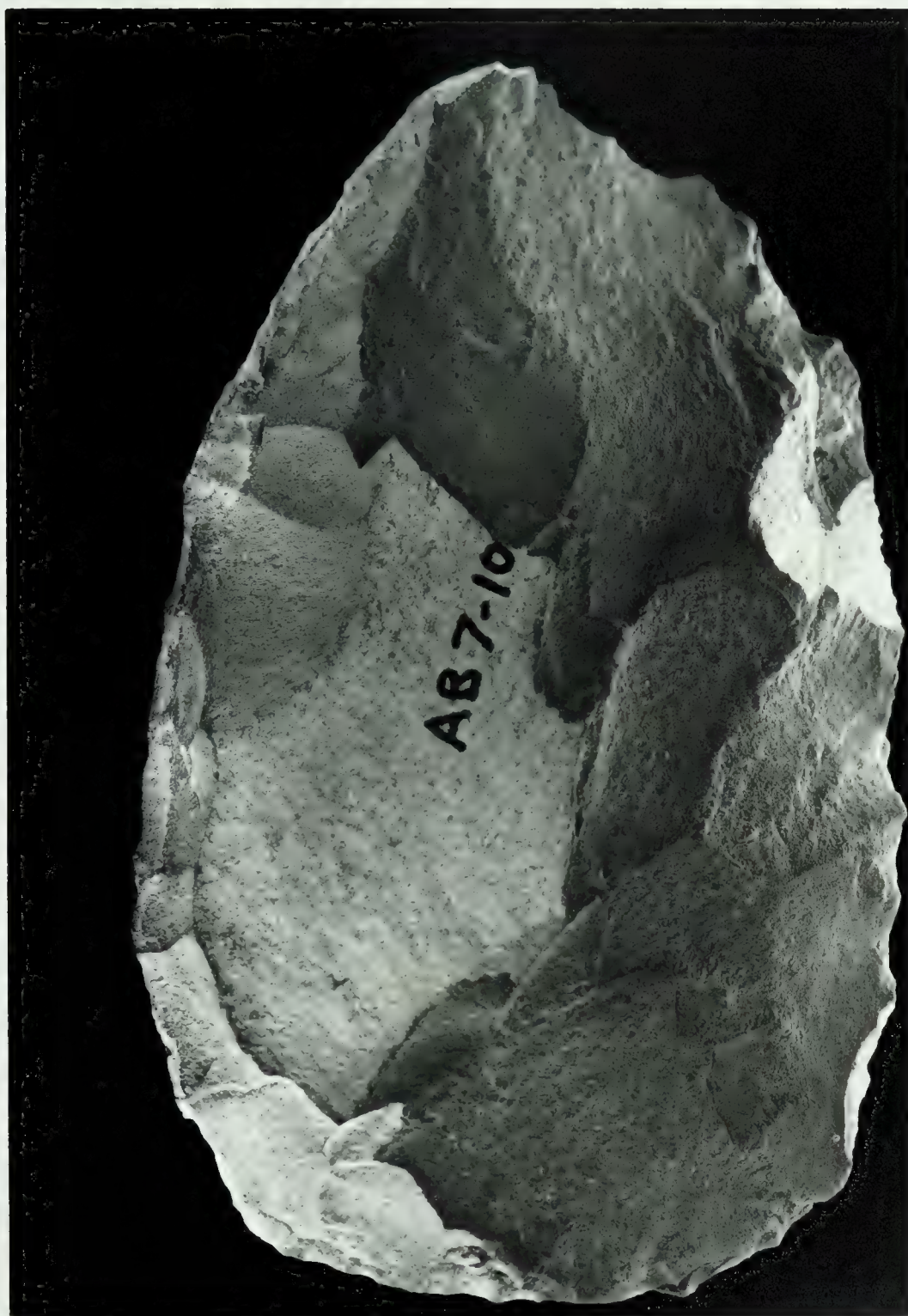


Plate 36: Photograph of Experimental Specimen AB7-10.



Table 48: Individual Flake Scar Attribute Form - Experimental Specimens

- 1.0 Experimental Specimen Catalogue Number: AB11-11
- 1.1 Experimental Specimen Storage Location: University of Alberta
- 1.2 Lithic Raw Material Type Used: Welded Tuff from Lake Abitibi, Ont.
- 1.3 Modern Lithic Craftsman: Dr. R. Bonnicksen
- 1.4 Flake Scar Attributes
- Coded From:      Photograph(s) X      Drawing(s) X      Artifact(s) X
- 1.5 Photographic Plate Identification Number: Roll 4, A4, #19
- 1.6 Video Tape Reel Identification Number: V-22-04-001
- 2.0 Description of Experiment:
- Indirect billet percussion utilizing a vertical striking billet on a lateral (horizontal) billet set on platform. One billet end is placed on and held steady against a platform on the artifact edge. The second billet then strikes the first billet detaching the flake. Artifact edges were ground prior to flake removal (videotape 3975 to 4719).
- 2.1 Extent of Effect: substantial - 4
- 2.2 Type of Behavior: indirect percussion thin - 51
- 2.3 Tool Used: billet on billet - Caribou and #20 billets - 51
- 2.4 Total Flake Scars on Specimen: 3
- 2.5 Attributes on the following coding form are taken from Table 14:





Attributes and Attribute States	Attribute States Present on Experimental Flake Scars	#'s of Flake Scars Exhibiting Attribute State Checked in First Column	% of Relevant Scars Exhibiting Attribute State Checked in First Column
1.0 FLAKE SCAR PROXIMAL EDGE ATTRIBUTES			
1.0 FLAKE SCAR SIZE			
1.1.1 very minimal			
1.1.2 minimal			
1.1.3 moderate			
1.1.4 substantial	X	2,3	66.6%
1.1.5 very substantial	X	1	33.3%
2.0 FLAKE SCAR PROXIMAL EDGE ATTRIBUTES			
2.1 EDGE SHARPNESS			
2.1.1 sharp edge	X	1,2,3	100%
2.1.2 intermediate edge			
2.1.3 dull edge			
2.2 MARGIN DAMAGE			
2.2.1 absent	X	1,3	66.6%
2.2.2 light	X	2	33.3%
2.2.3 heavy			
2.3 MICROFLAKES			
2.3.1 absent	X	1	33.3% very sub.
2.3.2 light	X	2,3	66.6% sub.
2.3.3 heavy			
2.4 PROX. EDGE MORPH.			



2.4.1	straight			
2.4.2	U shaped notch			
2.4.3	flat curved notch	X	1,2,3	100%
2.4.4	convex projections			
2.4.5	other			

### 3.0 FLAKE SCAR PROFILE ATTRIBUTES

3.1	PERCUSSION BULB			
3.1.1	not applicable			
3.1.2	indistinct	X	1,2	66.6%
3.1.3	distinct	X	1	33.3%
3.2	TRANSITION ANGLE			
3.2.1	not applicable			
3.2.2	gradual rise	X	1,2,3	100%
3.2.3	steep rise			
3.3	FLAKE THICKNESS			
3.3.1	not applicable			
3.3.2	thin	X	1,2,3	the very sub. (#1) is
3.3.3	thick			borderline between thin & thick

### 4.0 FLAKE SCAR INTERIOR MORPHOLOGY ATTRIBUTES

4.1	RIBS			
4.1.1	absent			
4.1.2	limited	X	2	33.3%
4.1.3	moderate			
4.1.4	extensive			
4.1.5	very extensive			



## 4.2 DISTINCTIVENESS/RIBS

4.2.1 not applicable

4.2.2	indistinct	X	2	33.3%
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4.2.3 moderately distinct

4.2.4 pronounced

4.2.5 variable

## 4.3 RIB SPACING

4.3.1	not applicable			33.3% uncertain coding here
-------	----------------	--	--	-----------------------------------

4.3.2	far apt. evenly dist.	X	2(?)	due to indistinct ribs and
-------	-----------------------	---	------	----------------------------------

4.3.3	far apt. on dist. half	X	2(?)	coarse raw material
-------	------------------------	---	------	------------------------

4.3.4 close, evenly dist.

4.3.5 close, on dist. half

4.3.6 variable

## 4.4 TEARING

4.4.1	absent	X	2,3	66.6%
-------	--------	---	-----	-------

4.4.2	light	X	1	33.3% (very sub. flake)
-------	-------	---	---	-------------------------------

4.4.3 heavy

## 5.0 FLAKE SCAR DISTAL EDGE ATTRIBUTES

## 5.1 SCAR SHAPE DIST. EDGE

5.1.1 straight dist. edge

5.1.2	rounded dist. edge	X	3	33.3%
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5.1.3	irregular dist. edge	X	1,2	66.6%
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## 5.2 SCAR TERMINATION





5.2.1	feather	X	1,2,3	100%
5.2.2	step			



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EXPERIMENT AB 11-11

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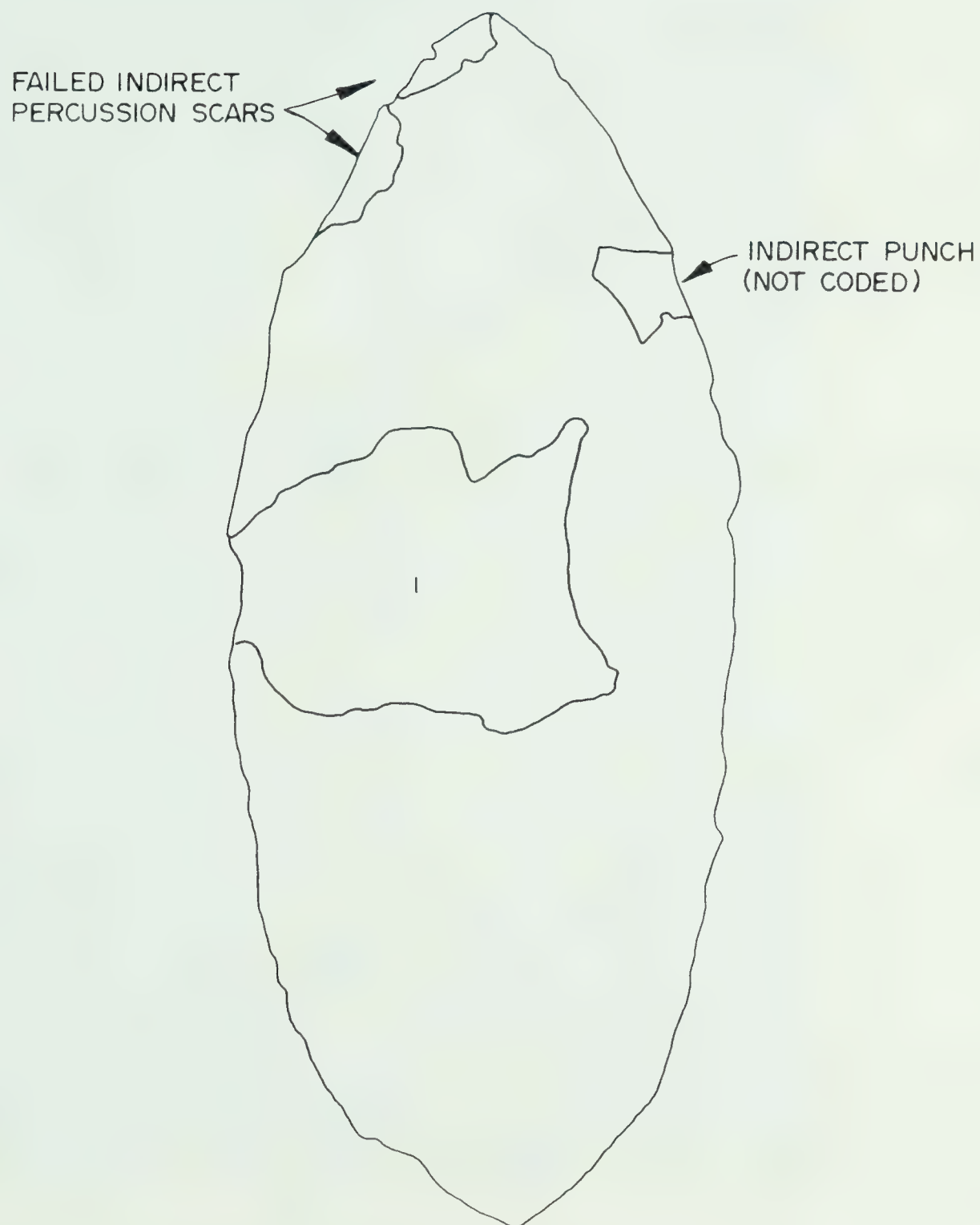
SUBSTANTIAL INDIRECT PERCUSSION  
OBVERSE FACE

Figure 26: Line drawing of specimen AB11-11.  
(Obverse side).

0 10 20 30mm



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EXPERIMENT AB 11-11

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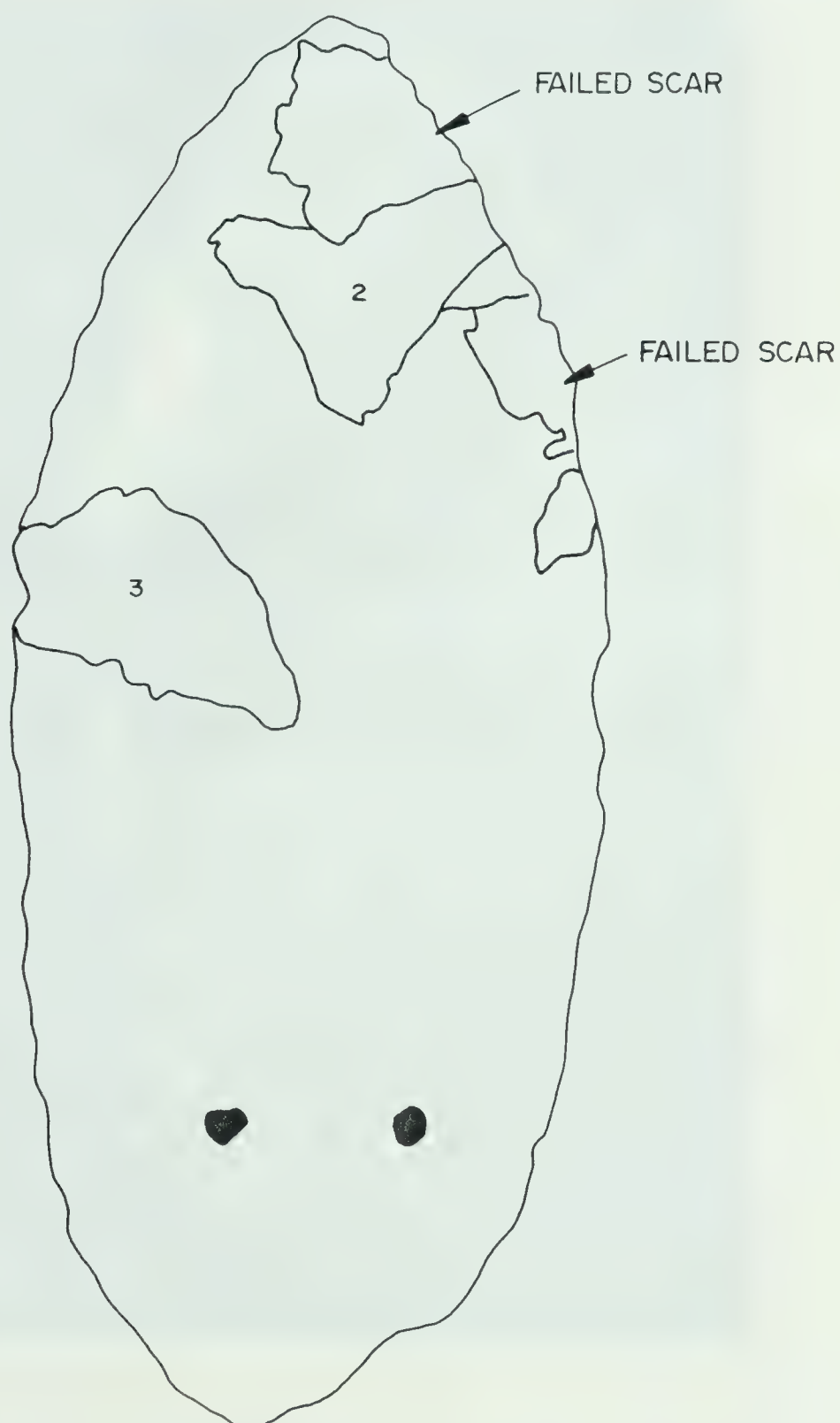
SUBSTANTIAL INDIRECT PERCUSSION  
REVERSE FACE

Figure 27: Line drawing of Specimen AB11-11.  
(Reverse side).

0 10 20 30mm





Plate 37: Photograph of Experimental Specimen AB11-11.





Table 49: Individual Flake Scar Attribute Form - Experimental Specimens

- 1.0 Experimental Specimen Catalogue Number: AB6-13 (Side A)
- 1.1 Experimental Specimen Storage Location: University of Alberta
- 1.2 Lithic Raw Material Type Used: Welded Tuff from Lake Abitibi, Ont.
- 1.3 Modern Lithic Craftsman: Dr. R. Bonnicksen
- 1.4 Flake Scar Attributes
- Coded From:      Photograph(s) X      Drawing(s) X      Artifact(s) X
- 1.5 Photographic Plate Identification Number: Roll 2, A2, #21a
- 1.6 Video Tape Reel Identification Number: V-22-04-001

2.0 Description of Experiment:

Minimal/moderate shear-shaping (coded as minimum) with an antler pressure flaker (side A in diagram) (videotape 5640 to 5679). Shearing involves placing the flat side of a tool against the artifact edge and slowly twisting it diagonally or vertically across the artifact edge (Nicholas & Bonnicksen n.d.:22). This unit reduces, strengthens, straightens and centers the edge all at the same time.

- 2.1 Extent of Effect: minimum - 2
- 2.2 Type of Behavior: shear shape - 22
- 2.3 Tool Used: pressure flaker
- 2.4 Total Flake Scars on Specimen: 6
- 2.5 Attributes on the following coding form are taken from Table 14:



Attributes and Attribute States	Attribute States Present on Experimental Flake Scars	#'s of Flake Scars Exhibiting Attribute State Checked in First Column	% of Relevant Scars Exhibiting Attribute State Checked in First Column
1.0 FLAKE SCAR PROXIMAL EDGE ATTRIBUTES			
1.0 FLAKE SCAR SIZE			
1.1.1 very minimal	X	all	100%
1.1.2 minimal			
1.1.3 moderate			
1.1.4 substantial			
1.1.5 very substantial			
2.0 FLAKE SCAR PROXIMAL EDGE ATTRIBUTES			
2.1 EDGE SHARPNESS			
2.1.1 sharp edge	X	5,6	33.3%
2.1.2 intermediate edge	X	1,2,3,4	66.6%
2.1.3 dull edge			
2.2 MARGIN DAMAGE			
2.2.1 absent			
2.2.2 light	X	2	16.7%
2.2.3 heavy			
2.3 MICROFLAKES			
2.3.1 absent			
2.3.2 light			
2.3.3 heavy	X	3,4,5,6	66.6%
2.4 PROX. EDGE MORPH.			



2.4.1	straight	X	all	mostly straight (but also follows original edge)
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2.4.2	U shaped notch			
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2.4.3	flat curved notch			
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2.4.4	convex projections			
-------	--------------------	--	--	--

2.4.5	other			
-------	-------	--	--	--

### 3.0 FLAKE SCAR PROFILE ATTRIBUTES

#### 3.1 PERCUSSION BULB

3.1.1	not applicable	X	all	100%
-------	----------------	---	-----	------

3.1.2	indistinct			
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3.1.3	distinct			
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#### 3.2 TRANSITION ANGLE

3.2.1	not applicable	X	all	100%
-------	----------------	---	-----	------

3.2.2	gradual rise			
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3.2.3	steep rise			
-------	------------	--	--	--

#### 3.3 FLAKE THICKNESS

3.3.1	not applicable	X	all	100%
-------	----------------	---	-----	------

3.3.2	thin			
-------	------	--	--	--

3.3.3	thick			
-------	-------	--	--	--

### 4.0 FLAKE SCAR INTERIOR MORPHOLOGY ATTRIBUTES

#### 4.1 RIBS

4.1.1	absent	X	all	100%
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4.1.2	limited			
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4.1.3	moderate			
-------	----------	--	--	--

4.1.4	extensive			
-------	-----------	--	--	--





4.1.5	very extensive			
4.2	DISTINCTIVENESS/RIBS			
4.2.1	not applicable	X	all	100%
4.2.2	indistinct			
4.2.3	moderately distinct			
4.2.4	pronounced			
4.2.5	variable			
4.3	RIB SPACING			
4.3.1	not applicable	X	all	100%
4.3.2	far apt. evenly dist.			
4.3.3	far apt. on dist. half			
4.3.4	close, evenly dist.			
4.3.5	close, on dist. half			
4.3.6	variable			
4.4	TEARING			
4.4.1	absent	X	all	100%
4.4.2	light			
4.4.3	heavy			
5.0 FLAKE SCAR DISTAL EDGE ATTRIBUTES				
5.1	SCAR SHAPE DIST. EDGE			
5.1.1	straight dist. edge	X	1,3,5	50%
5.1.2	rounded dist. edge			
5.1.3	irregular dist. edge	X	2,4,6	50%
5.2	SCAR TERMINATION			
5.2.1	feather	X	all	100%
5.2.2	step			



Table 50: Individual Flake Scar Attribute Form - Experimental Specimens

- 1.0 Experimental Specimen Catalogue Number: AB6-13 (Side B)
- 1.1 Experimental Specimen Storage Location: University of Alberta
- 1.2 Lithic Raw Material Type Used: Welded Tuff from Lake Abitibi, Ont.
- 1.3 Modern Lithic Craftsman: Dr. R. Bonnicksen
- 1.4 Flake Scar Attributes
- Coded From:      Photograph(s) X      Drawing(s) X      Artifact(s) X
- 1.5 Photographic Plate Identification Number: Roll 2, A2, #21a
- 1.6 Video Tape Reel Identification Number: V-22-04-001

2.0 Description of Experiment:

Moderate/substantial shear shaping (coded as moderate) with an antler pressure flaker (side B in diagram). An area of mod./sub. shear shaping with a copper tool has not been coded.

- 2.1 Extent of Effect: moderate to substantial (coded as mod.) - 3
- 2.2 Type of Behavior: shear shape - 22
- 2.3 Tool Used: antler pressure flaker - 30
- 2.4 Total Flake Scars on Specimen: 9
- 2.5 Attributes on the following coding form are taken from Table 14:

N.B. The mod./sub. edge on side B appears to be sharper than the min./mod. effect on side A.



Attributes and Attribute States	Attribute States Present on Experimental Flake Scars	#'s of Flake Scars Exhibiting Attribute State Checked in First Column	% of Relevant Scars Exhibiting Attribute State Checked in First Column
1.0 FLAKE SCAR PROXIMAL EDGE ATTRIBUTES			
1.0 FLAKE SCAR SIZE			
1.1.1 very minimal	X	1 to 5	55.5%
1.1.2 minimal	X	6 to 9	44.4%
1.1.3 moderate			
1.1.4 substantial			
1.1.5 very substantial			
2.0 FLAKE SCAR PROXIMAL EDGE ATTRIBUTES			
2.1 EDGE SHARPNESS			
2.1.1 sharp edge	X	all	100%
2.1.2 intermediate edge	X		
2.1.3 dull edge			
2.2 MARGIN DAMAGE			
2.2.1 absent			
2.2.2 light			
2.2.3 heavy	X	all	100%
2.3 MICROFLAKES			
2.3.1 absent			
2.3.2 light			
2.3.3 heavy	X	all	100%



## 2.4 PROX. EDGE MORPH.

2.4.1	straight	X	all	100% follows original edge
2.4.2	U shaped notch			
2.4.3	flat curved notch			
2.4.4	convex projections			
2.4.5	other			

## 3.0 FLAKE SCAR PROFILE ATTRIBUTES

## 3.1 PERCUSSION BULB

3.1.1	not applicable	X	all	100%
3.1.2	indistinct			
3.1.3	distinct			

## 3.2 TRANSITION ANGLE

3.2.1	not applicable	X	all	100%
3.2.2	gradual rise			
3.2.3	steep rise			

## 3.3 FLAKE THICKNESS

3.3.1	not applicable	X	all	100%
3.3.2	thin			
3.3.3	thick			

## 4.0 FLAKE SCAR INTERIOR MORPHOLOGY ATTRIBUTES

## 4.1 RIBS

4.1.1	absent	X	all	100%
4.1.2	limited			
4.1.3	moderate			
4.1.4	extensive			
4.1.5	very extensive			





## 4.2 DISTINCTIVENESS/RIBS

4.2.1	not applicable	X	all	100%
4.2.2	indistinct			
4.2.3	moderately distinct			
4.2.4	pronounced			
4.2.5	variable			

## 4.3 RIB SPACING

4.3.1	not applicable	X	all	100%
4.3.2	far apt. evenly dist.			
4.3.3	far apt. on dist. half			
4.3.4	close, evenly dist.			
4.3.5	close, on dist. half			
4.3.6	variable			

## 4.4 TEARING

4.4.1	absent	X	all	100%
4.4.2	light			
4.4.3	heavy			

## 5.0 FLAKE SCAR DISTAL EDGE ATTRIBUTES

## 5.1 SCAR SHAPE DIST. EDGE

5.1.1	straight dist. edge	X	1,2,6,9	44.4%
5.1.2	rounded dist. edge			
5.1.3	irregular dist. edge	X	3,4,5,7,8	56%

## 5.2 SCAR TERMINATION

5.2.1	feather	X	1,2,3,4,6,7,8	77.7%
5.2.2	step	X	5,9	22.2%



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EXPERIMENT AB 6-13

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SIDE A

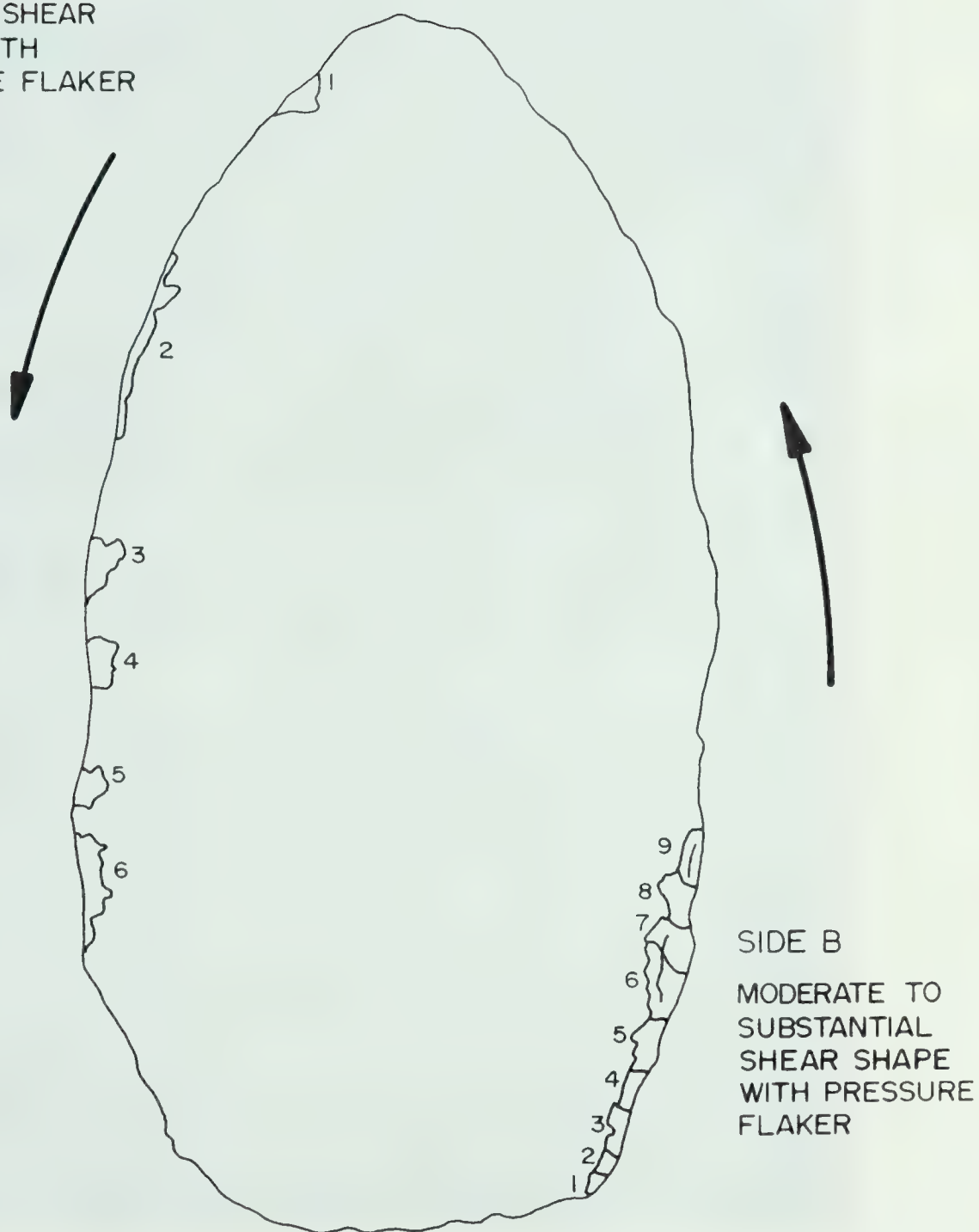
MINIMUM SHEAR  
SHAPE WITH  
PRESSURE FLAKER

Figure 28: Line drawing of specimen AB6-13.

0 5 10 20mm





Plate 38: Photograph of Experimental Specimen AB6-13.





Table 51: Individual Flake Scar Attribute Form - Experimental Specimens

1.0 Experimental Specimen Catalogue Number: AB13-15

1.1 Experimental Specimen Storage Location: University of Alberta

1.2 Lithic Raw Material Type Used: Welded Tuff from Lake Abitibi, Ont.

1.3 Modern Lithic Craftsman: Dr. R. Bonnicksen

1.4 Flake Scar Attributes

Coded From:      Photograph(s) X      Drawing(s) X      Artifact(s) X

1.5 Photographic Plate Identification Number: Roll 3, A3, 13

1.6 Video Tape Reel Identification Number: V-22-04-001

2.0 Description of Experiment:

Minimum pressure shape (no attempt to thin artifact) with pressure flaker. Specimen also contains notching units with antler and copper which were not coded (videotape 5407 to 5488).

2.1 Extent of Effect: minimum - 2

2.2 Type of Behavior: pressure shape - 32

2.3 Tool Used: pressure flaker - 31

2.4 Total Flake Scars on Specimen: 16

2.5 Attributes on the following coding form are taken from Table 14:

N.B. Minimal pressure flaking resembles micro-flaking.



Attributes and Attribute States	Attribute States Present on Experimental Flake Scars	#'s of Flake Scars Exhibiting Attribute State Checked in First Column	% of Relevant Scars Exhibiting Attribute State Checked in First Column
1.0 FLAKE SCAR PROXIMAL EDGE ATTRIBUTES			
1.0 FLAKE SCAR SIZE			
1.1.1 very minimal			
1.1.2 minimal	X	all	100%
1.1.3 moderate			
1.1.4 substantial			
1.1.5 very substantial			
2.0 FLAKE SCAR PROXIMAL EDGE ATTRIBUTES			
2.1 EDGE SHARPNESS			
2.1.1 sharp edge	X	all	100%
2.1.2 intermediate edge			
2.1.3 dull edge			
2.2 MARGIN DAMAGE			
2.2.1 absent			
2.2.2 light	X	9,10,15	18.75%
2.2.3 heavy			
2.3 MICROFLAKES			
2.3.1 absent	X	all	100% (the pressure flaking resembles microflaking)
2.3.2 light			
2.3.3 heavy			



## 2.4 PROX. EDGE MORPH.

2.4.1 straight

2.4.2 U shaped notch	X	all	100%
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2.4.3 flat curved notch

2.4.4 convex projections

2.4.5 other

## 3.0 FLAKE SCAR PROFILE ATTRIBUTES

## 3.1 PERCUSSION BULB

3.1.1 not applicable	X	all	100%
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3.1.2 indistinct

3.1.3 distinct

## 3.2 TRANSITION ANGLE

3.2.1 not applicable	X	all	100%
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3.2.2 gradual rise

3.2.3 steep rise

## 3.3 FLAKE THICKNESS

3.3.1 not applicable	X	all	100%
----------------------	---	-----	------

3.3.2 thin

3.3.3 thick

## 4.0 FLAKE SCAR INTERIOR MORPHOLOGY ATTRIBUTES

## 4.1 RIBS

4.1.1 absent	X	all	100%
--------------	---	-----	------

4.1.2 limited

4.1.3 moderate

4.1.4 extensive

4.1.5 very extensive



## 4.2 DISTINCTIVENESS/RIBS

4.2.1	not applicable	X	100%
4.2.2	indistinct		
4.2.3	moderately distinct		
4.2.4	pronounced		
4.2.5	variable		

## 4.3 RIB SPACING

4.3.1	not applicable	X	100%
4.3.2	far apt. evenly dist.		
4.3.3	far apt. on dist. half		
4.3.4	close, evenly dist.		
4.3.5	close, on dist. half		
4.3.6	variable		

## 4.4 TEARING

4.4.1	absent	X	100%
4.4.2	light		
4.4.3	heavy		

## 5.0 FLAKE SCAR DISTAL EDGE ATTRIBUTES

## 5.1 SCAR SHAPE DIST. EDGE

5.1.1	straight dist. edge	X	1,2,5,7,11, 12,13,16	50%
5.1.2	rounded dist. edge	X	3,4,6,8,9, 10,14,15	50%

## 5.1.3 irregular dist. edge

## 5.2 SCAR TERMINATION

5.2.1	feather	X	1-10,12,14 15,16,	87.5%
5.2.2	step	X	11,13	12.5%





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EXPERIMENT AB 13-15

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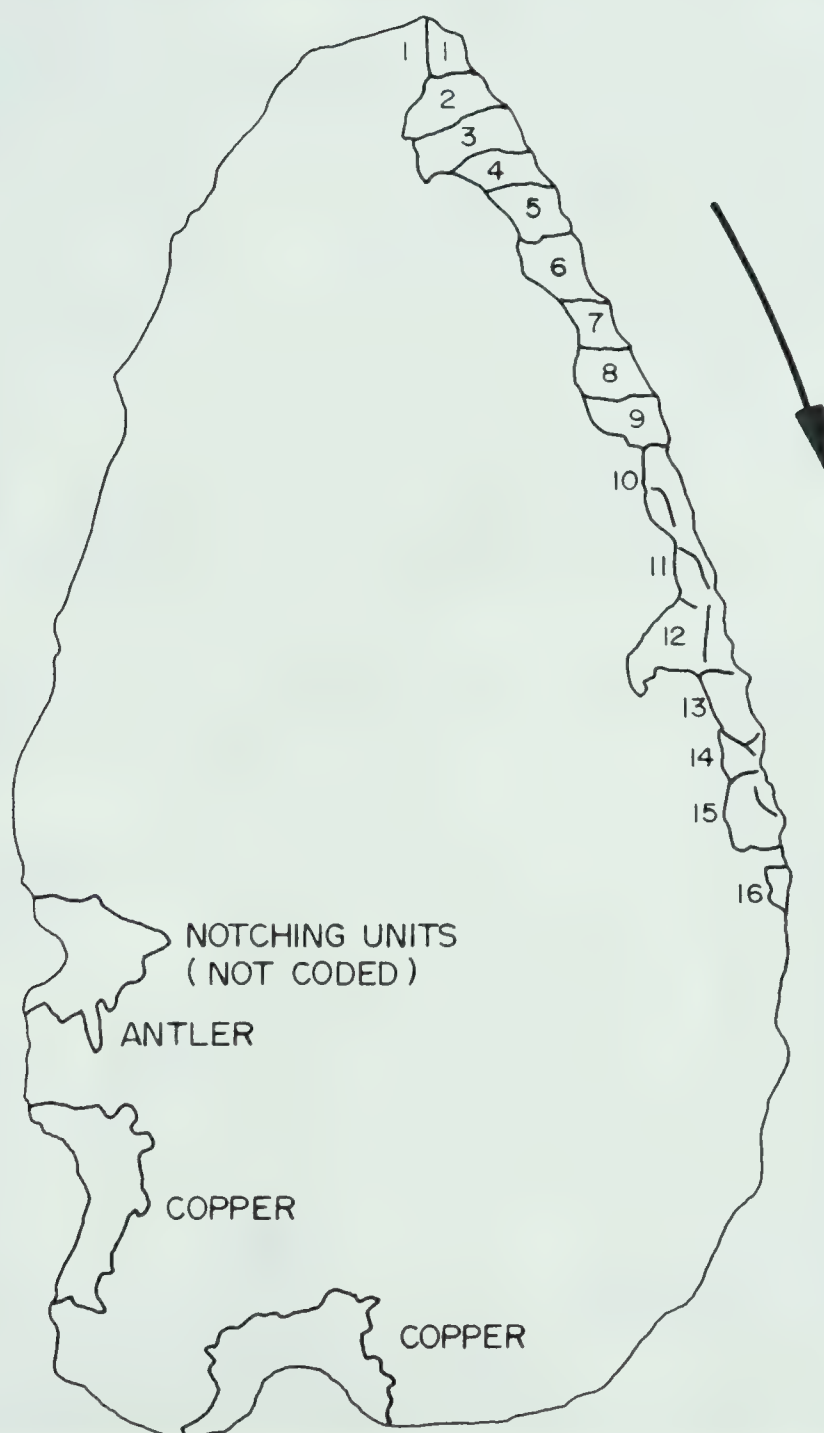
MINIMUM PRESSURE SHAPE  
WITH PRESSURE FLAKER

Figure 29: Line drawing of specimen AB13-15.

0 5 10 20mm



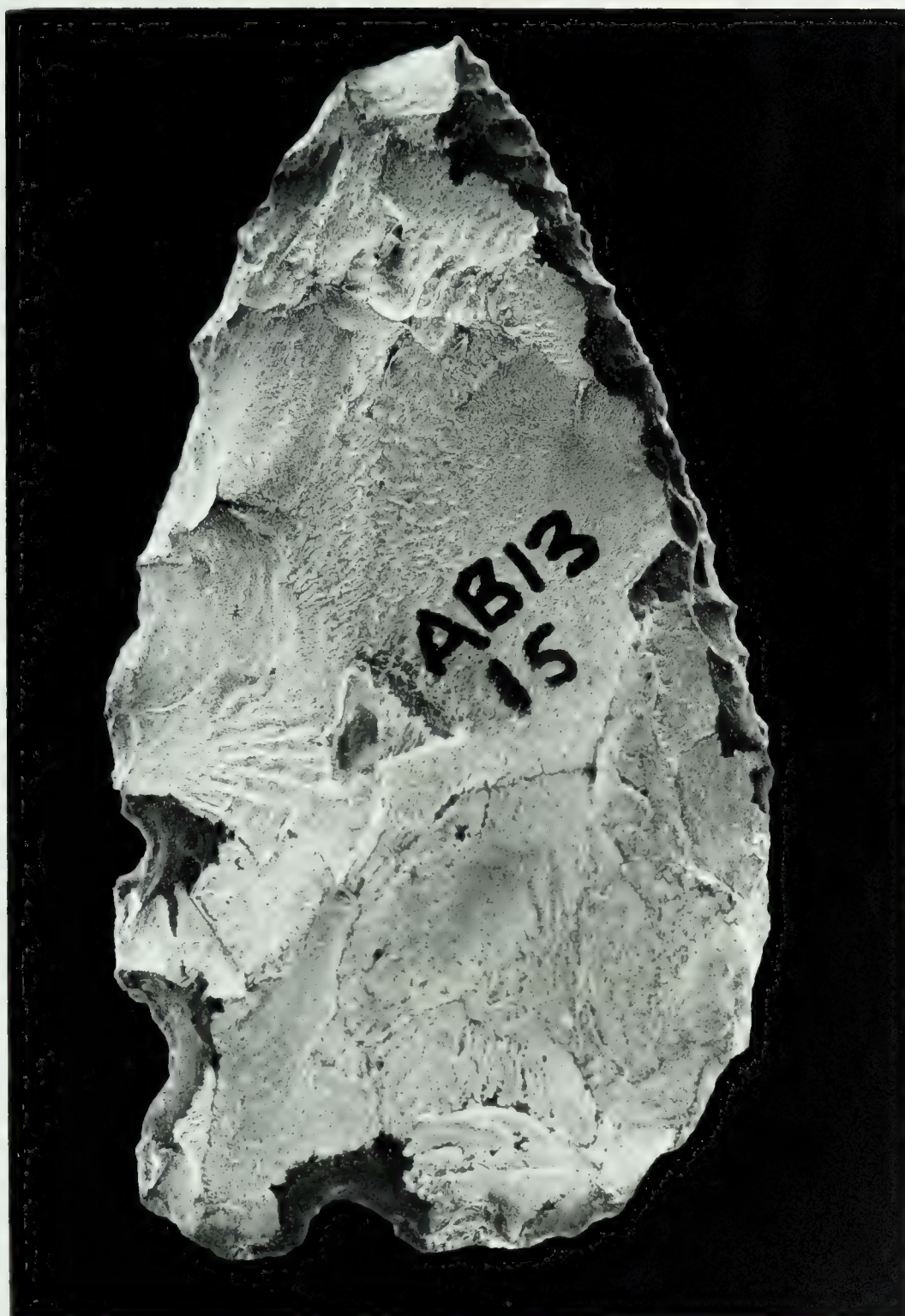


Plate 39: Photograph of Experimental Specimen AB13-15.



Table 52: Individual Flake Scar Attribute Form - Experimental Specimens

- 1.0 Experimental Specimen Catalogue Number: AB14-16 (Side A)
- 1.1 Experimental Specimen Storage Location: University of Alberta
- 1.2 Lithic Raw Material Type Used: Welded Tuff from Lake Abitibi, Ont.
- 1.3 Modern Lithic Craftsman: Dr. R. Bonnicksen
- 1.4 Flake Scar Attributes
- Coded From:      Photograph(s) X      Drawing(s) X      Artifact(s) X
- 1.5 Photographic Plate Identification Number: Roll 3, A3, #20
- 1.6 Video Tape Reel Identification Number: V-22-04-001

2.0 Description of Experiment:

Substantial percussion shape with hammerstone (side A in diagram) (videotape 5488 - 5542). (Originally experiment was classed as moderate.) Edge shaping involves removing material so that the edge is regularized in a symmetrical curve. The major intent is shaping rather than thinning the artifact. This is accomplished by taking off large chunks of material from the edge which results in the margins being moved in at a much greater rate than the specimen is thinned.

- 2.1 Extent of Effect: substantial - 4
- 2.2 Type of Behavior: percussion shape - 42
- 2.3 Tool Used: hammerstone - 41
- 2.4 Total Flake Scars on Specimen: 3
- 2.5 Attributes on the following coding form are taken from Table 14:

N.B. Substantial percussion shape with hammerstone is often used on cores (R. Bonnicksen: personal communication).







Attributes and Attribute States	Attribute States Present on Experimental Flake Scars	#'s of Flake Scars Exhibiting Attribute State Checked in First Column	% of Relevant Scars Exhibiting Attribute State Checked in First Column
1.0 FLAKE SCAR PROXIMAL EDGE ATTRIBUTES			
1.0 FLAKE SCAR SIZE			
1.1.1 very minimal			
1.1.2 minimal			
1.1.3 moderate			
1.1.4 substantial	X	1,2,3	100%
1.1.5 very substantial			
2.0 FLAKE SCAR PROXIMAL EDGE ATTRIBUTES			
2.1 EDGE SHARPNESS			
2.1.1 sharp edge	X	all	100%
2.1.2 intermediate edge			
2.1.3 dull edge			
2.2 MARGIN DAMAGE			
2.2.1 absent			
2.2.2 light			
2.2.3 heavy	X	1,2,3	100%
2.3 MICROFLAKES			
2.3.1 absent			
2.3.2 light	X	2	33.3% (some faint ones as part of margin damage)
2.3.3 heavy			



## 2.4 PROX. EDGE MORPH. (platform)

2.4.1	straight	X	2	33.3%
2.4.2	U shaped notch			
2.4.3	flat curved notch	X	1,3	66.6%
2.4.4	convex projections			
2.4.5	other			

## 3.0 FLAKE SCAR PROFILE ATTRIBUTES

## 3.1 PERCUSSION BULB

3.1.1	not applicable			
3.1.2	indistinct	X	1,2,3	100%
3.1.3	distinct			

## 3.2 TRANSITION ANGLE

3.2.1	not applicable			
3.2.2	gradual rise	X	1,2,3	100%
3.2.3	steep rise			

## 3.3 FLAKE THICKNESS

3.3.1	not applicable			
3.3.2	thin	X	1,2,3	100%
3.3.3	thick			

## 4.0 FLAKE SCAR INTERIOR MORPHOLOGY ATTRIBUTES

## 4.1 RIBS

4.1.1	absent			
4.1.2	limited	X	3	33.3%
4.1.3	moderate			
4.1.4	extensive			
4.1.5	very extensive			



## 4.2 DISTINCTIVENESS/RIBS

4.2.1 not applicable

4.2.2	indistinct	X	3	33.3% (very hard to see)
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4.2.3 moderately distinct

4.2.4 pronounced

4.2.5 variable

## 4.3 RIB SPACING

4.3.1 not applicable

4.3.2	far apt. evenly dist.	X	3	33.3%
-------	-----------------------	---	---	-------

4.3.3 far apt. on dist. half

4.3.4 close, evenly dist.

4.3.5 close, on dist. half

4.3.6 variable

## 4.4 TEARING

4.4.1 absent

4.4.2	light	X	3	33.3% (some visible under 3X magnification on 1 & 2)
-------	-------	---	---	--

4.4.3 heavy

## 5.0 FLAKE SCAR DISTAL EDGE ATTRIBUTES

## 5.1 SCAR SHAPE DIST. EDGE

5.1.1	straight dist. edge	X	1,3	33.3%
-------	---------------------	---	-----	-------

5.1.2 rounded dist. edge

5.1.3	irregular dist. edge	X	2	66.6%
-------	----------------------	---	---	-------

## 5.2 SCAR TERMINATION



5.2.1	feather	X	1,2	66.6%
5.2.2	step	X	3	33.3%





Table 53: Individual Flake Scar Attribute Form - Experimental Specimens

- 1.0 Experimental Specimen Catalogue Number: AB14-16 (Side B)
- 1.1 Experimental Specimen Storage Location: University of Alberta
- 1.2 Lithic Raw Material Type Used: Welded Tuff from Lake Abitibi, Ont.
- 1.3 Modern Lithic Craftsman: Dr. R. Bonnicksen
- 1.4 Flake Scar Attributes
  - Coded From:      Photograph(s) X      Drawing(s) X      Artifact(s) X
- 1.5 Photographic Plate Identification Number: Roll 3, A3, #20
- 1.6 Video Tape Reel Identification Number: V-22-04-001

## 2.0 Description of Experiment:

Minimal percussion shape with hammerstone (videotape 5488 - 5542). Due to the thickness of the preform the effective shaping with minimal percussion was slight.

- 2.1 Extent of Effect: minimal - 1
- 2.2 Type of Behavior: percussion shape - 42
- 2.3 Tool Used: hammerstone - 41
- 2.4 Total Flake Scars on Specimen: 6
- 2.5 Attributes on the following coding form are taken from Table 14:

N.B. It would appear possible that for minimal shaping and thinning, other units rather than percussion, such as shear shaping would be more effective.



Attributes and Attribute States	Attribute States Present on Experimental Flake Scars	#'s of Flake Scars Exhibiting Attribute State Checked in First Column	% of Relevant Scars Exhibiting Attribute State Checked in First Column
1.0 FLAKE SCAR PROXIMAL EDGE ATTRIBUTES			
1.0 FLAKE SCAR SIZE			
1.1.1 very minimal	X	1,4,5,6	66.6%
1.1.2 minimal	X	2,3	33.3%
1.1.3 moderate			
1.1.4 substantial			
1.1.5 very substantial			
2.0 FLAKE SCAR PROXIMAL EDGE ATTRIBUTES			
2.1 EDGE SHARPNESS			
2.1.1 sharp edge	X	1	16.6%
2.1.2 intermediate edge	X	2,3,4,5,6	83.3%
2.1.3 dull edge			
2.2 MARGIN DAMAGE			
2.2.1 absent			
2.2.2 light			
2.2.3 heavy	X	1,2,3,4,5,6	100%
2.3 MICROFLAKES			
2.3.1 absent	X	all	100%
2.3.2 light			
2.3.3 heavy			
2.4 PROX. EDGE MORPH.			
2.4.1 straight	X	2,3,4,5,6	83.3%



2.4.2	U shaped notch	X	1	83.3%
2.4.3	flat curved notch			
2.4.4	convex projections			
2.4.5	other			
3.0 FLAKE SCAR PROFILE ATTRIBUTES				
3.1	PERCUSSION BULB			
3.1.1	not applicable	X	all	100%
3.1.2	indistinct			
3.1.3	distinct			
3.2	TRANSITION ANGLE			
3.2.1	not applicable	X	all	100%
3.2.2	gradual rise			
3.2.3	steep rise			
3.3	FLAKE THICKNESS			
3.3.1	not applicable	X	all	100%
3.3.2	thin			
3.3.3	thick			
4.0 FLAKE SCAR INTERIOR MORPHOLOGY ATTRIBUTES				
4.1	RIBS			
4.1.1	absent	X	all	100%
4.1.2	limited			
4.1.3	moderate			
4.1.4	extensive			
4.1.5	very extensive			
4.2	DISTINCTIVENESS/RIBS			
4.2.1	not applicable	X	all	100%





---

4.2.2 indistinct

---

4.2.3 moderately distinct

---

4.2.4 pronounced

---

4.2.5 variable

---

4.3 RIB SPACING

---

4.3.1 not applicable	X	all	100%
----------------------	---	-----	------

---

4.3.2 far apt. evenly dist.

---

4.3.3 far apt. on dist. half

---

4.3.4 close, evenly dist.

---

4.3.5 close, on dist. half

---

4.3.6 variable

---

4.4 TEARING

---

4.4.1 absent	X	all	100%
--------------	---	-----	------

---

4.4.2 light

---

4.4.3 heavy

---

## 5.0 FLAKE SCAR DISTAL EDGE ATTRIBUTES

---

5.1 SCAR SHAPE DIST. EDGE

---

5.1.1 straight dist. edge	X	2,3	33.3%
---------------------------	---	-----	-------

---

5.1.2 rounded dist. edge	X	1,4,5,6	66.6%
--------------------------	---	---------	-------

---

5.1.3 irregular dist. edge

---

5.2 SCAR TERMINATION

---

5.2.1 feather		1,4,5,6	66.6%
---------------	--	---------	-------

---

5.2.2 step		2,3	33.3%
------------	--	-----	-------

---



---

EXPERIMENT AB 14-16

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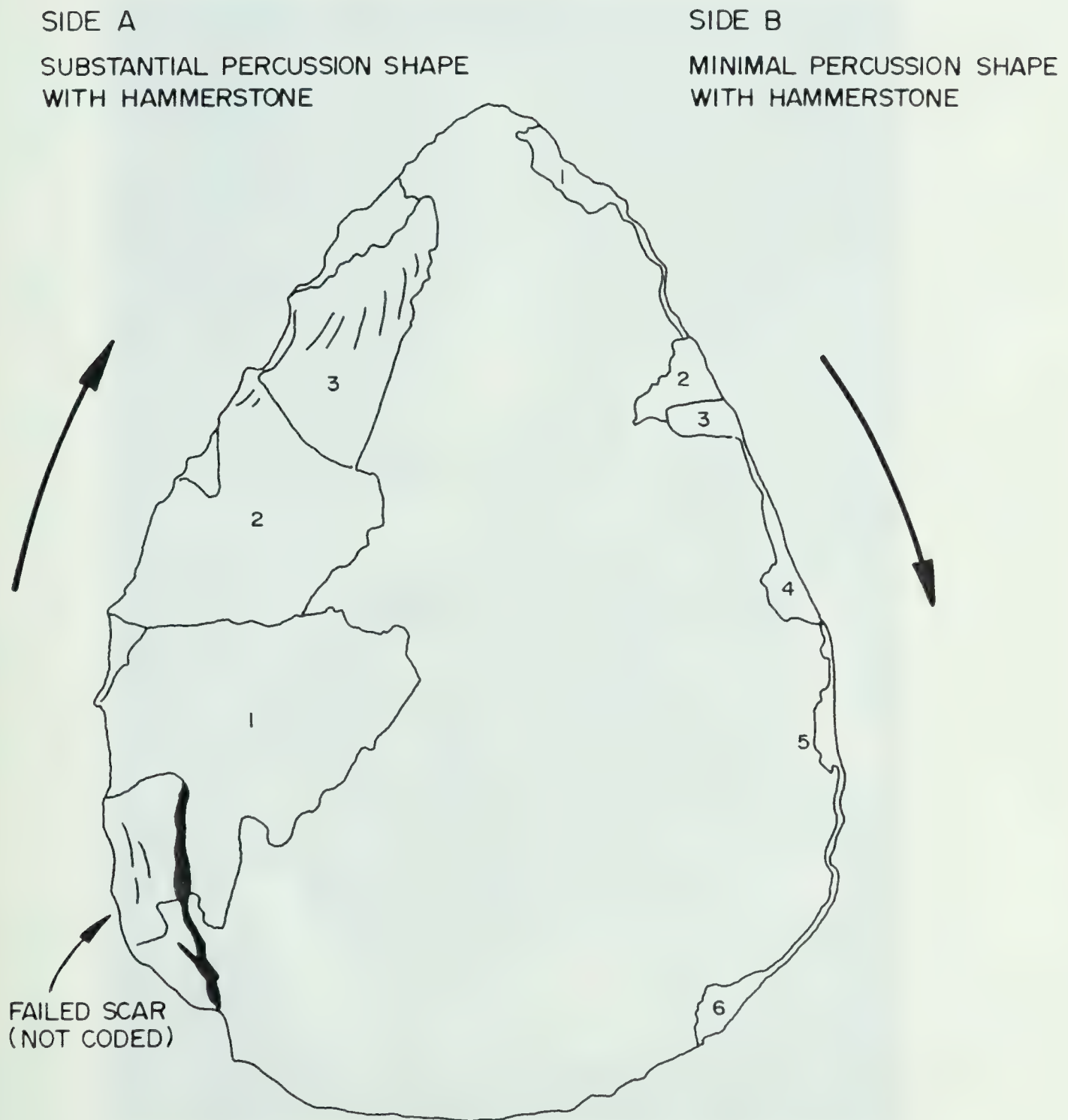


Figure 30: Line drawing of specimen AB14-16.

0 5 10 20mm





Plate 40: Photograph of Experimental Specimen AB14-16.





Table 54: Individual Flake Scar Attribute Form - Experimental Specimens

- 1.0 Experimental Specimen Catalogue Number: AB3-17
- 1.1 Experimental Specimen Storage Location: University of Alberta
- 1.2 Lithic Raw Material Type Used: Welded Tuff from Lake Abitibi, Ont.
- 1.3 Modern Lithic Craftsman: Dr. R. Bonnicksen
- 1.4 Flake Scar Attributes
- Coded From:      Photograph(s) X      Drawing(s) X      Artifact(s) X
- 1.5 Photographic Plate Identification Number: Roll 3, A4, #25
- 1.6 Video Tape Reel Identification Number: V-22-04-001
- 2.0 Description of Experiment:
- Moderate percussion shape with hammerstone. This unit was originally coded as substantial but the flake sizes indicate it should be in the moderate category (videotape 5542 to 5565). The experiment was not too successful in regularizing the edge.
- 2.1 Extent of Effect: moderate - 3
- 2.2 Type of Behavior: percussion shape - 42
- 2.3 Tool Used: hammerstone - 41
- 2.4 Total Flake Scars on Specimen: 3
- 2.5 Attributes on the following coding form are taken from Table 14:





Attributes and Attribute States	Attribute States Present on Experimental Flake Scars	#'s of Flake Scars Exhibiting Attribute State Checked in First Column	% of Relevant Scars Exhibiting Attribute State Checked in First Column
1.0 FLAKE SCAR PROXIMAL EDGE ATTRIBUTES			
1.0 FLAKE SCAR SIZE			
1.1.1 very minimal			
1.1.2 minimal	X	1,2	66.6%
1.1.3 moderate	X	3	33.3%
1.1.4 substantial			
1.1.5 very substantial			
2.0 FLAKE SCAR PROXIMAL EDGE ATTRIBUTES			
2.1 EDGE SHARPNESS			
2.1.1 sharp edge	X	all	100%
2.1.2 intermediate edge			
2.1.3 dull edge			
2.2 MARGIN DAMAGE			
2.2.1 absent			
2.2.2 light			
2.2.3 heavy	X	2,3	66.6%
2.3 MICROFLAKES			
2.3.1 absent	X	all	100%
2.3.2 light			
2.3.3 heavy			
2.4 PROX. EDGE MORPH.			
2.4.1 straight	X	1	33.3%



2.4.2	U shaped notch			
2.4.3	flat curved notch	X	2,3	66.6%
2.4.4	convex projections			
2.4.5	other			
3.0 FLAKE SCAR PROFILE ATTRIBUTES				
3.1	PERCUSSION BULB			
3.1.1	not applicable			
3.1.2	indistinct	X	all	100%
3.1.3	distinct			
3.2	TRANSITION ANGLE (from bulb)			
3.2.1	not applicable			
3.2.2	gradual rise	X	all	100%
3.2.3	steep rise			
3.3	FLAKE THICKNESS			
3.3.1	not applicable	X	all	100%
3.3.2	thin			
3.3.3	thick			
4.0 FLAKE SCAR INTERIOR MORPHOLOGY ATTRIBUTES				
4.1	RIBS			
4.1.1	absent			
4.1.2	limited	X	2	33.3% - only visible when light angle is right
4.1.3	moderate			
4.1.4	extensive			

N.B. Secondary experiments also produced ribs on some hard hammer percussion (John Pollock: personal communication).



---

4.1.5 very extensive

---

4.2 DISTINCTIVENESS/RIBS

---

4.2.1 not applicable

---

4.2.2 indistinct	X	2	33.3%
------------------	---	---	-------

---

4.2.3 moderately distinct

---

4.2.4 pronounced

---

4.2.5 variable

---

4.3 RIB SPACING

---

4.3.1 not applicable

---

4.3.2 far apt. evenly dist.	X	2	33.3%
-----------------------------	---	---	-------

---

4.3.3 far apt. on dist. half

---

4.3.4 close, evenly dist.

---

4.3.5 close, on dist. half

---

4.3.6 variable

---

4.4 TEARING

---

4.4.1 absent

---

4.4.2 light	X		present on remnant scar
-------------	---	--	----------------------------

---

4.4.3 heavy

---

5.0 FLAKE SCAR DISTAL EDGE ATTRIBUTES

---

5.1 SCAR SHAPE DIST. EDGE

---

5.1.1 straight dist. edge	X	1,2,3	100%
---------------------------	---	-------	------

---

5.1.2 rounded dist. edge

---

5.1.3 irregular dist. edge

---

5.2 SCAR TERMINATION

---

5.2.1 feather	X	1	33.3%
---------------	---	---	-------

---

5.2.2 step	X	2,3	66.6%
------------	---	-----	-------

---





---

EXPERIMENT AB 3-17

---

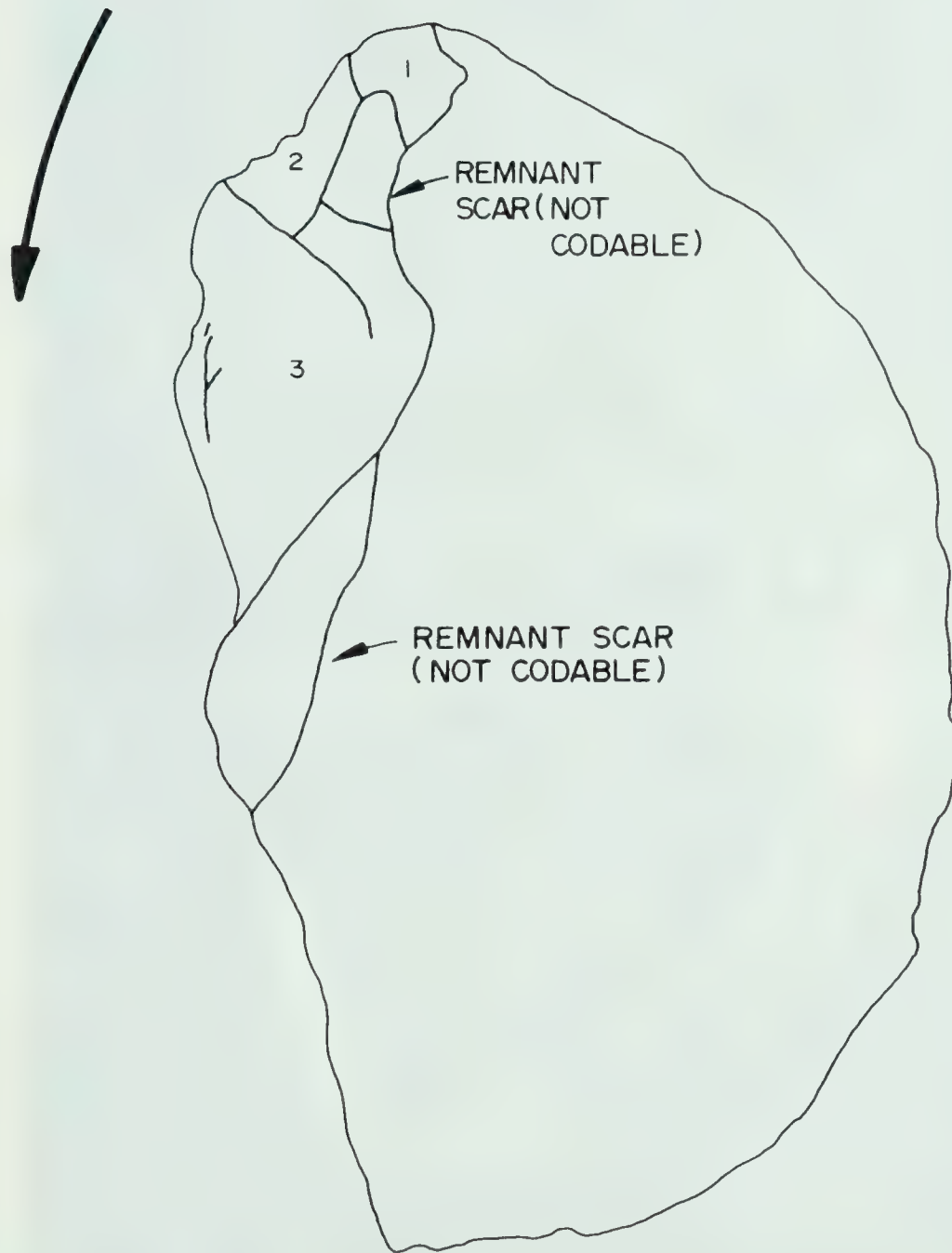
MODERATE PERCUSSION SHAPE  
WITH HAMMERSTONE

Figure 31: Line drawing of specimen AB3-17.

0 5 10 20mm





Plate 41: Photograph of Experimental Artifact AB3-17.



Table 55: Individual Flake Scar Attribute Form - Experimental Specimens

- 1.0 Experimental Specimen Catalogue Number: AB15-18 (Side A)
- 1.1 Experimental Specimen Storage Location: University of Alberta
- 1.2 Lithic Raw Material Type Used: Welded Tuff from Lake Abitibi, Ont.
- 1.3 Modern Lithic Craftsman: Dr. R. Bonnicksen
- 1.4 Flake Scar Attributes
  - Coded From:      Photograph(s) X      Drawing(s) X      Artifact(s) X
- 1.5 Photographic Negative Identification Number: Roll 2, A2, #27A
- 1.6 Video Tape Reel Identification Number: V-22-04-001

## 2.0 Description of Experiment:

Moderate percussion shape with billet (on left lateral margin (Side A) (videotape 5565 - 5613). As with other forms of shaping the main interest is to move in the margins at a greater rate than the specimen is thinned.

- 2.1 Extent of Effect: moderate - 3
- 2.2 Type of Behavior: percussion shape - 42
- 2.3 Tool Used: billet - 51
- 2.4 Total Flake Scars on Specimen: 7 (6 on side A, 1 on side B)
- 2.5 Attributes on the following coding form are taken from Table 14:





Attributes and Attribute States	Attribute States Present on Experimental Flake Scars	#'s of Flake Scars Exhibiting Attribute State Checked in First Column	% of Relevant Scars Exhibiting Attribute State Checked in First Column
1.0 FLAKE SCAR PROXIMAL EDGE ATTRIBUTES			
1.0 FLAKE SCAR SIZE			
1.1.1 very minimal			
1.1.2 minimal			
1.1.3 moderate	X	all	100%
1.1.4 substantial			
1.1.5 very substantial			
2.0 FLAKE SCAR PROXIMAL EDGE ATTRIBUTES			
2.1 EDGE SHARPNESS			
2.1.1 sharp edge	X	all	100%
2.1.2 intermediate edge			
2.1.3 dull edge			
2.2 MARGIN DAMAGE			
2.2.1 absent			
2.2.2 light			
2.2.3 heavy	X	1,5,7	42.85%
2.3 MICROFLAKES			
2.3.1 absent			
2.3.2 light	X	5,6	28.6%
2.3.3 heavy			
2.4 PROX. EDGE MORPH.			

N.B. Scar #7 on side B is a good example of a billet scar.





2.4.1	straight	X	4,5,6	42.86%
2.4.2	U shaped notch			
2.4.3	flat curved notch	X	1,2,3,7	57.14% other plat- forms not present
2.4.4	convex projections			
2.4.5	other			

### 3.0 FLAKE SCAR PROFILE ATTRIBUTES

3.1	PERCUSSION BULB			
3.1.1	not applicable			
3.1.2	indistinct	X	1-6	85.72%
3.1.3	distinct	X	7	14.28%
3.2	TRANSITION ANGLE			
3.2.1	not applicable			
3.2.2	gradual rise			
3.2.3	steep rise	X	1,2,7	42.85%
3.3	FLAKE THICKNESS			
3.3.1	not applicable			
3.3.2	thin	X	1-6	85.72%
3.3.3	thick	X	7	14.28%

### 4.0 FLAKE SCAR INTERIOR MORPHOLOGY ATTRIBUTES

4.1	RIBS			
4.1.1	absent			
4.1.2	limited	X	7	14.28% (very indistinct)
4.1.3	moderate			
4.1.4	extensive			



4.1.5	very extensive			
4.2	DISTINCTIVENESS/RIBS			
4.2.1	not applicable			
4.2.2	indistinct	X	7	14.28%
4.2.3	moderately distinct			
4.2.4	pronounced			
4.2.5	variable			
4.3	RIB SPACING			
4.3.1	not applicable			
4.3.2	far apt. evenly dist.			
4.3.3	far apt. on dist. half	X	7	14.28%
4.3.4	close, evenly dist.			(ribs very
4.3.5	close, on dist. half			hard to see)
4.3.6	variable			
4.4	TEARING			
4.4.1	absent			
4.4.2	light	X	7	14.28%
				very indistinct similar to sub. hard hammer
4.4.3	heavy			

#### 5.0 FLAKE SCAR DISTAL EDGE ATTRIBUTES

5.1	SCAR SHAPE DIST. EDGE			
5.1.1	straight dist. edge	X	1,3,4,5	57.14%
5.1.2	rounded dist. edge	X	2,6,7	42.85%
5.1.3	irregular dist. edge			



## 5.2 SCAR TERMINATION

5.2.1	feather	X	1,2,3,4,7	71.4%
5.2.2	step	X	5,6	28.6%





Table 56: Individual Flake Scar Attribute Form - Experimental Specimens

- 1.0 Experimental Specimen Catalogue Number: AB15-18 (Side B)
- 1.1 Experimental Specimen Storage Location: University of Alberta
- 1.2 Lithic Raw Material Type Used: Welded Tuff from Lake Abitibi, Ont.
- 1.3 Modern Lithic Craftsman: Dr. R. Bonnicksen
- 1.4 Flake Scar Attributes
- Coded From:      Photograph(s) X      Drawing(s) X      Artifact(s) X
- 1.5 Photographic Plate Identification Number: Roll 2, A2, #27a
- 1.6 Video Tape Reel Identification Number: V-22-04-001

2.0 Description of Experiment:

Minimum percussion shape with billet (right lateral margin, side B) (videotape 5565 - 5613).

- 2.1 Extent of Effect: minimal - 2
- 2.2 Type of Behavior: percussion shape - 42
- 2.3 Tool Used: billet - 51
- 2.4 Total Flake Scars on Specimen: 5
- 2.5 Attributes on the following coding form are taken from Table 14:

N.B. Minimal percussion with a billet is similar to AB16-7 and AB5-9 (minimum percussion thins with hammerstone and billet). These produce similar effects in edge crushing, etc. See note on experiment AB5-9.



Attributes and Attribute States	Attribute States Present on Experimental Flake Scars	#'s of Flake Scars Exhibiting Attribute State Checked in First Column	% of Relevant Scars Exhibiting Attribute State Checked in First Column
1.0 FLAKE SCAR PROXIMAL EDGE ATTRIBUTES			
1.0 FLAKE SCAR SIZE			
1.1.1 very minimal			
1.1.2 minimal	X	all	100%
1.1.3 moderate			
1.1.4 substantial			
1.1.5 very substantial			
2.0 FLAKE SCAR PROXIMAL EDGE ATTRIBUTES			
2.1 EDGE SHARPNESS			
2.1.1 sharp edge	X	all	100%
2.1.2 intermediate edge			
2.1.3 dull edge			
2.2 MARGIN DAMAGE			
2.2.1 absent			
2.2.2 light			
2.2.3 heavy	X	all	100%
2.3 MICROFLAKES			
2.3.1 absent			
2.3.2 light			
2.3.3 heavy	X	1-4	80%
2.4 PROX. EDGE MORPH.			
2.4.1 straight	X	all	100%



---

2.4.2 U shaped notch

---

2.4.3 flat curved notch

---

2.4.4 convex projections

---

2.4.5 other

---

### 3.0 FLAKE SCAR PROFILE ATTRIBUTES

---

3.1 PERCUSSION BULB

---

3.1.1 not applicable	X	all	100%
----------------------	---	-----	------

---

3.1.2 indistinct

---

3.1.3 distinct

---

3.2 TRANSITION ANGLE

---

3.2.1 not applicable	X	all	100%
----------------------	---	-----	------

---

3.2.2 gradual rise

---

3.2.3 steep rise

---

3.3 FLAKE THICKNESS

---

3.3.1 not applicable	X	all	100%
----------------------	---	-----	------

---

3.3.2 thin

---

3.3.3 thick

---

### 4.0 FLAKE SCAR INTERIOR MORPHOLOGY ATTRIBUTES

---

4.1 RIBS

---

4.1.1 absent	X	all	100%
--------------	---	-----	------

---

4.1.2 limited

---

4.1.3 moderate

---

4.1.4 extensive

---

4.1.5 very extensive

---

4.2 DISTINCTIVENESS/RIBS

---

4.2.1 not applicable	X	all	100%
----------------------	---	-----	------

---



---

4.2.2 indistinct

---

4.2.3 moderately distinct

---

4.2.4 pronounced

---

4.2.5 variable

---

4.3 RIB SPACING

---

4.3.1 not applicable	X	all	100%
----------------------	---	-----	------

---

4.3.2 far apt. evenly dist.

---

4.3.3 far apt. on dist. half

---

4.3.4 close, evenly dist.

---

4.3.5 close, on dist. half

---

4.3.6 variable

---

4.4 TEARING

---

4.4.1 absent	X	all	100%
--------------	---	-----	------

---

4.4.2 light

---

4.4.3 heavy

---

## 5.0 FLAKE SCAR DISTAL EDGE ATTRIBUTES

---

5.1 SCAR SHAPE DIST. EDGE

---

5.1.1 straight dist. edge	X	1,2,3,4	80%
---------------------------	---	---------	-----

---

5.1.2 rounded dist. edge	X	5	20%
--------------------------	---	---	-----

---

5.1.3 irregular dist. edge

---

5.2 SCAR TERMINATION

---

5.2.1 feather	X	1,3,4,5	80%
---------------	---	---------	-----

---

5.2.2 step	X	2	20%
------------	---	---	-----

---





EXPERIMENT AB 15-18

SIDE A

MODERATE PERCUSSION  
SHAPE WITH BILLET

SIDE B

MINIMUM PERCUSSION  
SHAPE WITH BILLET

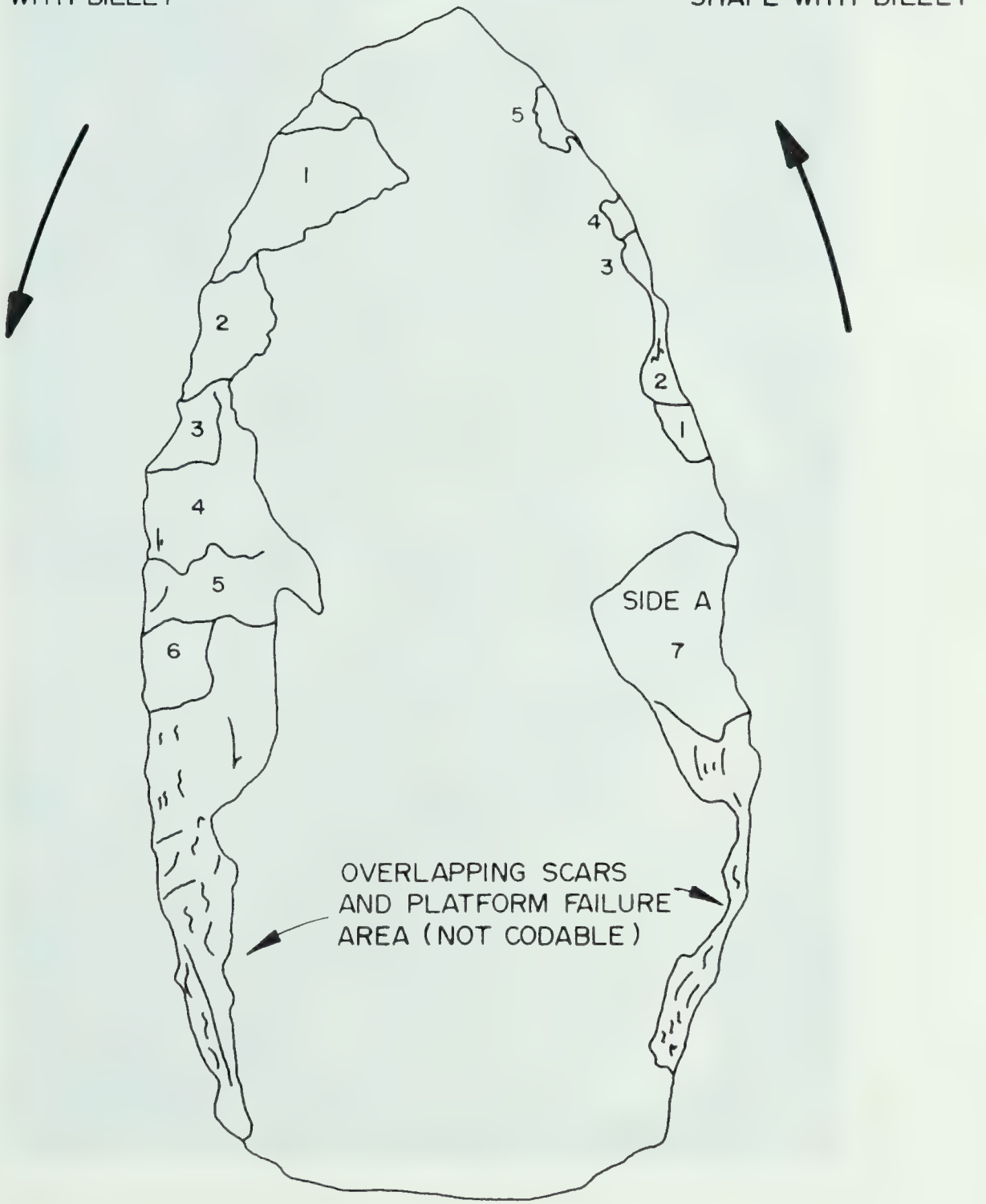


Figure 32: Line drawing of specimen AB15-18.

0 5 10 20mm





Plate 42: Photograph of Experimental Specimen AB15-18.



Table 57: Individual Flake Scar Attribute Form - Experimental Specimens

- 1.0 Experimental Specimen Catalogue Number: AB12-19
- 1.1 Experimental Specimen Storage Location: University of Alberta
- 1.2 Lithic Raw Material Type Used: Welded Tuff from Lake Abitibi, Ont.
- 1.3 Modern Lithic Craftsman: Dr. R. Bonnicksen
- 1.4 Flake Scar Attributes
- Coded From:      Photograph(s) X      Drawing(s) X      Artifact(s) X
- 1.5 Photographic Plate Identification Number: Roll 3, A4, #37
- 1.6 Video Tape Reel Identification Number: V-22-04-001

2.0 Description of Experiment:

Substantial percussion shape with billet (videotape 5613 - 5640). The purpose of percussion shaping is to move in the margins by taking off large thick flakes from the artifact edges, thus moving the edge rather than thinning the specimen.

- 2.1 Extent of Effect: substantial - 4
- 2.2 Type of Behavior: percussion shape - 42
- 2.3 Tool Used: billet - 51
- 2.4 Total Flake Scars on Specimen: 4
- 2.5 Attributes on the following coding form are taken from Table 14:

N.B. The flake size category differentiation may not be useful for shape units as these do not produce the long thin flakes resulting from thinning units.







Attributes and Attribute States	Attribute States Present on Experimental Flake Scars	#'s of Flake Scars Exhibiting Attribute State Checked in First Column	% of Relevant Scars Exhibiting Attribute State Checked in First Column
1.0 FLAKE SCAR PROXIMAL EDGE ATTRIBUTES			
1.0 FLAKE SCAR SIZE			
1.1.1 very minimal			
1.1.2 minimal			
1.1.3 moderate			
1.1.4 substantial	X	1-4	100%
1.1.5 very substantial			
2.0 FLAKE SCAR PROXIMAL EDGE ATTRIBUTES			
2.1 EDGE SHARPNESS	X	all	100%
2.1.1 sharp edge			
2.1.2 intermediate edge			
2.1.3 dull edge			
2.2 MARGIN DAMAGE			
2.2.1 absent			
2.2.2 light			
2.2.3 heavy	X	all	100%
2.3 MICROFLAKES			
2.3.1 absent	X	all	100%
2.3.2 light			
2.3.3 heavy			
2.4 PROX. EDGE MORPH.			
2.4.1 straight			



2.4.2	U shaped notch			
2.4.3	flat curved notch	X	1,2,3,4	100%
2.4.4	convex projections			
2.4.5	other			
3.0 FLAKE SCAR PROFILE ATTRIBUTES				
3.1	PERCUSSION BULB			
3.1.1	not applicable			
3.1.2	indistinct	X	all	100%
3.1.3	distinct			
3.2	TRANSITION ANGLE			
3.2.1	not applicable			
3.2.2	gradual rise	X	all	100%
3.2.3	steep rise			
3.3	FLAKE THICKNESS			
3.3.1	not applicable			
3.3.2	thin	X	1,2,4	75%
3.3.3	thick	X	3	25%
4.0 FLAKE SCAR INTERIOR MORPHOLOGY ATTRIBUTES				
4.1	RIBS			
4.1.1	absent			
4.1.2	limited	X	2	25%
4.1.3	moderate			
4.1.4	extensive			
4.1.5	very extensive			
4.2	DISTINCTIVENESS/RIBS			
4.2.1	not applicable			



4.2.2	indistinct	X	2	25%
4.2.3	moderately distinct			
4.2.4	pronounced			
4.2.5	variable			
4.3	RIB SPACING			
4.3.1	not applicable			
4.3.2	far apt. evenly dist.			
4.3.3	far apt. on dist. half	X	2	25%
4.3.4	close, evenly dist.			
4.3.5	close, on dist. half			
4.3.6	variable			
4.4	TEARING			
4.4.1	absent			
4.4.2	light			
4.4.3	heavy	X	2,3,4	75%
5.0 FLAKE SCAR DISTAL EDGE ATTRIBUTES				
5.1	SCAR SHAPE DIST. EDGE			
5.1.1	straight dist. edge	X	2,3,4	75%
5.1.2	rounded dist. edge	X	1	25% (flakes terminate along scar ridge)
5.1.3	irregular dist. edge			
5.2	SCAR TERMINATION			
5.2.1	feather	X	all	100%
5.2.2	step			



---

EXPERIMENT AB 12-19

---

## SUBSTANTIAL PERCUSSION SHAPE BILLET



Figure 33: Line drawing of specimen AB12-19.

0 5 10 20mm





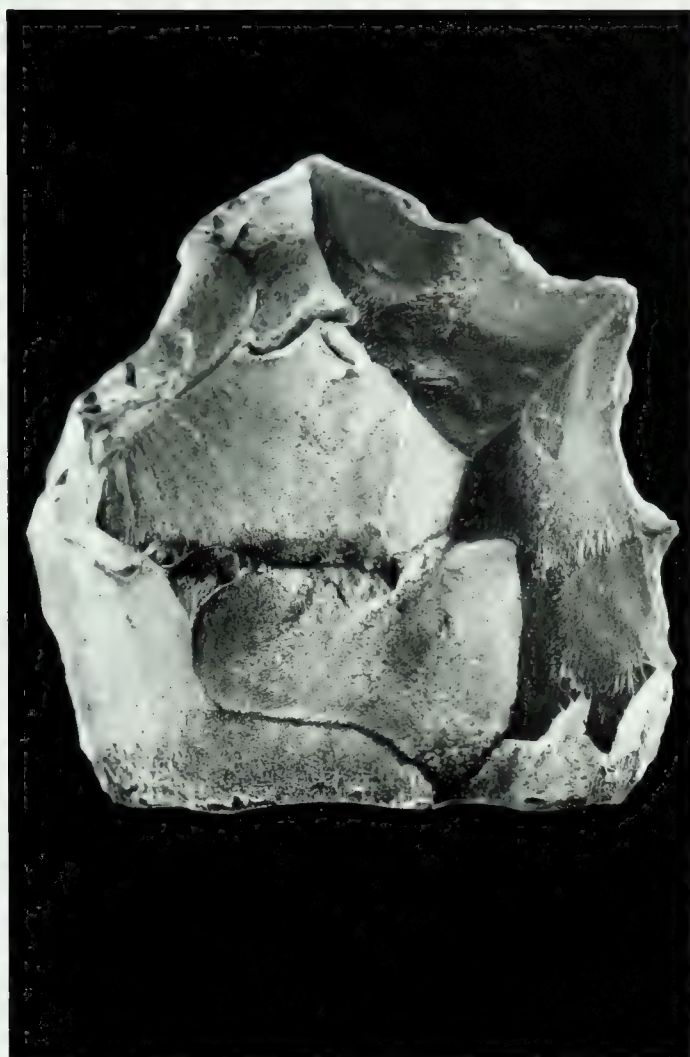


Plate 43: Photograph of Experimental Specimen AB12-19.



## APPENDIX 5. PREHISTORIC ARTIFACTS

Table 58: Form for Coding and Interpreting  
Prehistoric Artifacts

### 1.0 Prehistoric Artifact Identification

#### 1.1 Artifact Face:

#### 1.2 Prehistoric Specimen Provenience:

#### 1.3 Specimen Catalogue #:

#### 1.4 Photographic Plate Identification:

#### 1.5 Standard Artifact Description:

#### 1.6 Raw Material:

#### 1.7 Shape/Artifact Class:

#### 1.8 Flaking (Bifacial/Unifacial):

#### 1.9 Metric Size:   length    -                          width     -                          thickness -

#### 1.10 Form/Morphology Description:



## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact #	Main Flake Scar #	Edge Treatment on Same Scar	Notes
1.1	Scar Size		
2.1	Edge Sharpness		
2.2	Margin Damage		
2.3	Microflakes		
2.4	Proximal Edge Morphology		
3.1	Negative Bulb of Force		
3.2	Bulb to Scar Transition Angle		
3.3	Flake Thickness		
4.1	Presence or Absence of Ribs		
4.2	Distinctiveness of Ribs		
4.3	Rib Spacing And Distribution		
4.4	Tearing		
5.1	Scar Shape at Distal Edge		
5.2	Scar Termination at Distal Edge		





2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar

1.1	
2.1	
2.2	
2.3	
2.4	
3.1	
3.2	
3.3	
4.1	
4.2	
4.3	
4.4	



5.1	
5.2	
+	
Total	
-	
+	
%	
-	
Score	

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:



2.4 Summary of Behavior Units (Morpho-Units) Identified on Artifact

Main Scar #	Edge Unit Scar #	Rating on Scoring Scale	Final +/- Score	Behavior Unit	Experimental Control Specimen
-------------	------------------	-------------------------	-----------------	---------------	-------------------------------



### 3.0 Interpretation of Behavior (Technological) Units

#### (a) Transforming Behavior Units into Production Units:

3.1 Function of Percussion Thinning/Shaping Units (moderate to very substantial size scars on specimen)

3.2 Function of Pressure Thinning/Shaping Units (minimal to substantial size scars on specimen)

3.3 Function of Edge Units (minimal to very minimal size scars on specimen)





(b) Reconstructing Sequencing of Production Units:

3.4 Flow Diagram of Production Units (below)



### 3.5 Description and Discussion of Technological Grammar Found on Artifact



Table 59: Form for Coding and Interpreting  
Prehistoric Artifacts

## 1.0 Prehistoric Artifact Identification

1.1 Artifact Face: Obverse and Reverse

1.2 Prehistoric Specimen Provenience: DeHa-8 - Jordan Site

1.3 Specimen Catalogue #: C01083

1.4 Photographic Plate Identification: Roll 2, B3, #30A  
Roll 3, B4, #27

1.5 Standard Artifact Description

1.6 Raw Material: Welded Tuff

1.7 Shape/Artifact Class: Lanceolate Biface

1.8 Flaking (Bifacial/Unifacial): Bifacial

1.9 Metric Size: length - 10.3 cm  
width - 4.8 cm  
thickness - 1.3 cm

1.10 Form/Morphology Description:

This is a finished, broad, lanceolate biface which was originally a large flake. The obverse side of the former flake has been subjected to a series of shallow thinning flake removals while the reverse side exhibits an even larger number of flake scars. From a judgmental viewpoint, the specimen appears to be well made. Finally, some water-caused wear or polish is visible on the scar ridges of the reverse face.





## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C01083	Main Flake Scar # 0-5	Edge Treatment on Same Scar	Notes
1.1 Scar Size	sub.	very minimal (2) (3)	1. bulb of force removed by edge treatment.
2.1 Edge Sharpness		intermediate to dull	
2.2 Margin Damage		0	2. Edge Unit #1 coded from scars 1 to 7 and 25-29.
2.3 Microflakes		light	
2.4 Proximal Edge Morphology		straight with minor convex. projections	
3.1 Negative Bulb of Force	(see Note 1) n/a		
3.2 Bulb to Scar Transition Angle	n/a		
3.3 Flake Thickness	thin		
4.1 Presence or Absence of Ribs	present		
4.2 Distinctiveness of Ribs	indistinct		
4.3 Rib Spacing And Distribution	rel. far apart mid point to distal end		
4.4 Tearing	0		
5.1 Scar Shape at Distal Edge	rounded	predominantly rounded	
5.2 Scar Termination at Distal Edge	predominantly feather	predominantly step	



2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar 05, C01083

	Prehistoric C01083 Scar 05	AB7-10		AB8-6		AB11-11		AB16-7(a)	
		Sub. Perc. Thin Billet		Sub. Press. Thin P.F.		Sub. Indirect Percussion		Mod./Sub. Perc. Thin Hammerstone	
1.1	substantial	+ 1		+ 1		+ 1		+ 1	
2.1									
2.2									
2.3									
2.4									
3.1									
3.2									
3.3	thin	+ 50 - 50		+ 1		+ 1		+ 80 - 20	
4.1	present	+ 50 - 50		+ 50 - 50		+ 33.3 - 66.7		+ 80 - 20	
4.2	indistinct	+ 75 - 25		+ 1		+ 1		+ 1	
4.3	* n/a	n/a		n/a		n/a		n/a	
4.4	0	+ 75 - 25		+ 75 - 25		+ 66.6 - 33.3		+ 60 - 40	



5.1	rounded	+ 50 - 50	+ 75 - 25	+ 33.3 - 66.7	+ 40 - 60
5.2	predominantly feather	+ 25 - 75	+ 1	+ 60 - 40	+ 40 - 60
	+	+ 4.25	+ 6	+ 4.93	+ 5.0
Total	-	- 2.75	- 1	- 2.07	- 2.0
	+	+ 60.71	+ 86	+ 70.42	+ 71.42
%	-	- 39.29	- 14	- 29.57	- 28.57
Score		+ 21.42	+ 72	+ 40.85	+ 42.85

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

\* Ribs continue through to next scar - may be a feature of the raw material - attributed not including in coding or scoring.

Highly probable + 72 - Sub Pressure Thin with P.F.



2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar C01083, Edge Unit 1 (Scar 05)

Prehistoric C01083 Edge Unit 1	AB10-1(b) Min. Rub/Buflet with Billet	AB10-1(a) Min. Rub/Buflet Hammerstone	AB6-13(a) Min. Shear Shape with P.F.	AB2-2(c) Min. Platform Isolating P.F.	AB9-5(b) Min. Press. Thin with P.F.
1.1 very minimal	+ 1	+ 1	+ 1	+ 1	+ 1
2.1 intermediate to dull	+ 1	+ 1	+ 50 - 50	- 1	- 1
2.2 0	+ 85 - 15	- 1	+ 83.3 - 16.7	+ 14.28 - 85.72	+ 83 - 17
2.3 light	+ 15 - 85	- 1	- 1	+ 42.85 - 57.15	- 1
2.4 straight with convex project	+ 1	+ 1	+ 1	- 1	- 1
3.1					
3.2					
3.3					
4.1					
4.2					
4.3					
4.4					





5.1	pred. rounded	- 1	+ 25 - 75	- 1	+ 15 - 85	- 1
5.2	pred. step	+ 8 - 92	+ 50 - 50	- 1	+ 71 - 29	+ 58.4 - 41.6
Total						
+		+ 4.08	+ 3.75	+ 3.33	+ 2.43	+ 2.41
-		_ 2.92	_ 3.25	_ 3.67	- 4.57	_ 4.59
%						
+		+ 58	+ 54	+ 48	+ 35	+ 34
-		- 42	- 46	- 52	- 65	- 66
Score						
		+ 16	+ 8	- 4	- 30	- 32

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Indeterminate + 8 - min. rub buffet with hammerstone.

Based on the adjacent unit which scored + 64 for min. rub buffet with hammerstone it is likely that this unit is the same even though the billet scored higher in this case.



## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C01083	Main Flake Scar # 012	Edge Treatment on Same Scar	Notes
1.1 Scar Size	(1) moderate	(2) n/a	1. This scar overlaps another larger scar # 32 which is essentially similar.
2.1 Edge Sharpness		intermediate to dull	
2.2 Margin Damage		light	
2.3 Microflakes		0	2. Edge Unit # 3 coded from scars 8 to 14.
2.4 Proximal Edge Morphology		straight	3. The proximal portion of this scar is missing.
3.1 Negative Bulb of Force	indistinct		
3.2 Bulb to Scar Transition Angle	gradual		
3.3 Flake Shape Thickness	thin		
4.1 Presence or Absence of Ribs	present		
4.2 Distinctiveness of Ribs	indistinct		
4.3 Rib Spacing And Distribution	rel. close together on dist. 1/2 (3)		
4.4 Tearing	0		
5.1 Scar Shape at Distal Edge	straight	straight and rounded	
5.2 Scar Termination at Distal Edge	feather and step	feather and step	



2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar 012, C01083

	Prehistoric C01083 Scar 012	AB8-6 Sub. Press. Thin with P.F.	AB9-5(a) Mod. Press. Thin	AB16-7(a) Mod./Sub. Perc. Thin Hammerstone	AB5-9 Mod. Perc. Thin Billet	AB15-18(a) Mod. Perc. Shape Billet
1.1	moderate	+ 1	+ 67 - 33	+ 60 - 40	+ 40 - 60	+ 1
2.1						
2.2						
2.3						
2.4						
3.1	indistinct	+ 1	+ 1	+ 1	+ 80 - 20	+ 85.72 - 14.28
3.2	gradual	+ 1	+ 1	+ 1	+ 80 - 20	+ 1
3.3	thin	+ 1	+ 1	+ 80 - 20	+ 80 - 20	+ 85.72 - 14.28
4.1	present	+ 50 - 50	+ 22.2 - 77.8	+ 80 - 20	+ 20 - 80	+ 14.28 - 85.72
4.2	indistinct	+ 1	+ 1	+ 1	+ 1	+ 1
4.3	rel. close together dist. 1/2	+ 1	+ 1	- 1	- 1	- 1
4.4	0	+ 75 - 25	+ 1	+ 60 - 40	+ 80 - 20	+ 85.72 - 14.28





5.1	straight	+ 25 - 75	+ 55.6 - 44.4	+ 60 - 40	+ 60 - 40	+ 57.1 - 42.9
5.2	feather and step	+ 1	+ 1	+ 1	+ 1	+ 1
Total						
+		+ 8.5	+ 8.45	+ 7.4	+ 6.4	+ 7.29
-		- 1.5	- 1.55	- 2.6	- 3.6	2.71
%						
+		+ 85	+ 85	+ 74	+ 64	+ 73
-		- 15	- 15	- 26	- 36	- 27
Score						
		+ 70	+ 70	+ 48	+ 28	+ 46

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Highly probable + 70 sub. press. thin with p.f.



2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar C01083 Edge Unit # 3

Prehistoric C01083 Edge Unit # 3		AB2-2(a) Min. Rub/Abrade Hammerstone		AB10-1(b) Min. Rub/Bufket Billet		AB14-16(a) Min. Perc. Shape Hammer		AB6-13(a) Min. Shear Shape with P.F.		AB10-1(a) Min. Rub/Bufket Hammerstone	
1.1	n/a	+ 1		+ 1		+ 1		+ 1		+ 1	
2.1	intermediate to dull	+ 1		+ 1		+ 83.3 - 16.7		+ 66.7 - 33.3		+ 1	
2.2	light	- 1		+ 15 - 85		- 1		+ 16.7 - 83.5		- 1	
2.3	0	+ 1		+ 85 - 15		+ 1		+ 33.3 - 66.7		+ 1	
2.4	straight	+ 1		+ 1		+ 1		+ 1		+ 1	
3.1											
3.2											
3.3											
4.1											
4.2											
4.3											
4.4											



5.1	straight	+ 50 - 50	- 1	+ 1	+ 50 - 50	+ 75 - 25
5.2	feather and step	+ 50 - 50	+ 1	+ 1	+ 50 - 50	+ 1
<hr/>						
Total						
+		+ 5	+ 5	+ 5.83	+ 4.17	+ 5.75
-		- 2	- 2	- 1.17	- 2.83	- 1.25
<hr/>						
+		+ 71	+ 71	+ 83	+ 60	+ 82
-		- 29	- 29	- 17	- 40	- 18
<hr/>						
Score						
		+ 42	+ 42	+ 66	+ 20	+ 64
<hr/>						

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Possible - + 64 - Min. Rub/Buffer Hammerstone.

N.B. There is also a small area of min. shear shape with a p.f. on the base (scar R15 area).



## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C01083		Main Flake Scar # 0-24	Edge Treatment on Same Scar	Notes
1.1	Scar Size	moderate	(1)	1. Platform relatively unmodified.
2.1	Edge Sharpness	sharp		
2.2	Margin Damage	light		
2.3	Microflakes	0		
2.4	Proximal Edge Morphology	flat curve notch		
3.1	Negative Bulb of Force	indistinct		
3.2	Bulb to Scar Transition Angle	gradual		
3.3	Flake Thickness	thin		
4.1	Presence or Absence of Ribs	present		
4.2	Distinctiveness of Ribs	indistinct		
4.3	Rib Spacing And Distribution	far apart mid to dist. 1/2		
4.4	Tearing	0		
5.1	Scar Shape at Distal Edge	straight		
5.2	Scar Termination at Distal Edge	step		





2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar 024, C01083

	Prehistoric C01083 Scar 024	AB16-7(a)		AB8-6		AB5-9(b)	
		Mod./Sub.	Perc.	Sub.	Perc.	Mod.	Perc.
		Thin Hammerstone	Thin with P.F.	Thin with P.F.	Thin with P.F.	Thin Billet	Thin Billet
1.1	moderate	+ 60 - 40	+ 1	+ 1	+ 40 - 60		
2.1	sharp	+ 1	+ 1	+ 1	+ 1		
2.2	light	- 1	+ 50 - 50	+ 60 - 40			
2.3	0	+ 60 - 40	+ 1	+ 60 - 40			
2.4	flat curved notch	+ 1	- 1	+ 1			
3.1	indistinct	+ 1	+ 1	+ 80 - 20			
3.2	gradual	+ 1	+ 1	+ 80 - 20			
3.3	thin	+ 80 - 20	+ 1	+ 80 - 20			
4.1	present	+ 80 - 20	+ 50 - 50	+ 20 - 80			
4.2	indistinct	+ 1	+ 1	+ 1			
4.3	far apart on dist. 1/2	- 1	- 1	+ 1			
4.4	0	+ 60 - 40	+ 75 - 25	+ 80 - 20			



5.1	straight	+ 60 - 40	+ 25 - 75	+ 60 - 40
5.2	step	+ 60 - 40	+ 1	+ 50 - 50
	+	+ 9.60	+ 10	+ 10.10
Total	-	- 4.40	- 4	- 3.90
	+	+ 69	+ 71	+ 72
%	-	- 31	- 29	- 28
Score		+ 38	+ 42	+ 44

### 2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Identification is difficult because the scars are very close together but based on the fact that a similar nearby scar has been identified (026) as pressure flaking this scar is identified as:

Possible + 42 Sub. Press. Thin with P.F.



## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C01083	Main Flake Scar # 0-26	Edge Treatment on Same Scar	Notes
1.1 Scar Size	moderate	(1)	1. May have been used as a platform for removal of scar # R-6 on other side.
2.1 Edge Sharpness			
2.2 Margin Damage			
2.3 Microflakes			2. Edge Unit 1 coded from 1-7 and 25-29. (Coded on scar 05)
2.4 Proximal Edge Morphology			
3.1 Negative Bulb of Force	indistinct		
3.2 Bulb to Scar Transition Angle	gradual		
3.3 Flake Thickness	thin		
4.1 Presence or Absence of Ribs	0		
4.2 Distinctiveness of Ribs	n/a		
4.3 Rib Spacing And Distribution	n/a		
4.4 Tearing	0		
5.1 Scar Shape at Distal Edge	rounded		
5.2 Scar Termination at Distal Edge	step		





2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar 026, C01083

	Prehistoric C01083 Scar 026	AB5-9		AB8-6		AB9-5(a)		AB16-7(a)	
		Mod. Perc. Thin Billet		Sub. Press. Thin with P.F.		Mod. Press. Thin		Mod./Sub. Perc. Thin Hammerstone	
1.1	moderate	+ 40 - 60		+ 1		+ 67.33		+ 1	
2.1									
2.2									
2.3									
2.4									
3.1	indistinct	+ 80 - 20		+ 1		+ 1		+ 1	
3.2	gradual	+ 80 - 20		+ 1		+ 1		+ 1	
3.3	thin	+ 80 - 20		+ 1		+ 1		+ 1	
4.1	0	+ 80 - 20		+ 50 - 50		+ 77.8 - 22.2		+ 20 - 80	
4.2	n/a	n/a		n/a		n/a		n/a	
4.3	n/a	n/a		n/a		n/a		n/a	
4.4	0	+ 80 - 20		+ 75 - 25		+ 1		+ 60 - 40	



5.1	rounded	+ 40 - 60	+ 75 - 25	+ 11.1 - 88.9	+ 40 - 60
5.2	step	+ 50 - 50	+ 25 - 75	+ 22.2 - 77.8	+ 60 - 40
Total					
	+	+ 5.3	+ 6.25	+ 5.78	+ 5.8
	-	- 2.7	- 1.75	- 2.22	- 2.2
	+	+ 66	+ 78	+ 72	+ 73
	-	- 34	- 22	- 28	- 27
Score		+ 32	+ 56	+ 44	+ 46

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Possible + 56 Sub. Press. Thin with P.F.



## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C01083		Main Flake Scar # R-6	Edge Treatment on Same Scar	Notes
1.1	Scar Size	Substantial	(1)	1. Edge Unit coded on Scar # R23 platform for this scar largely intact.
2.1	Edge Sharpness	sharp		
2.2	Margin Damage	light		
2.3	Microflakes	light		
2.4	Proximal Edge Morphology	flat curved notch		
3.1	Negative Bulb of Force	indistinct		
3.2	Bulb to Scar Transition Angle	gradual		
3.3	Flake Thickness	thin		
4.1	Presence or Absence of Ribs	present		
4.2	Distinctiveness of Ribs	indistinct		
4.3	Rib Spacing And Distribution	rel. far apart on dist. 1/2		
4.4	Tearing	light		
5.1	Scar Shape at Distal Edge	irregular		
5.2	Scar Termination at Distal Edge	feather and step		



2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar # R6, C01083

Prehistoric C01083 Scar R6	AB7-10 Sub. Perc. Thin Billet	AB5-9 Mod. Perc. Thin Billet	AB11-11 Sub. Indirect Percussion	AB16-7(a) Mod./Sub. Perc. Thin Hammerstone
1.1 Substantial	+ 1	+ 1	+ 1	+ 1
2.1 sharp	+ 1	+ 1	+ 1	+ 1
2.2 light	+ 50 - 50	+ 60 - 40	+ 33.3 - 66.7	- 1
2.3 light	- 1	+ 40 - 60	+ 66.7 - 33.33	+ 40 - 60
2.4 flat curved	+ 75 - 25	+ 1	+ 1	+ 1
3.1 indistinct	+ 75 - 25	+ 80 - 20	+ 66.7 - 33.3	+ 1
3.2 gradual	+ 75 - 25	+ 80 - 20	+ 1	+ 1
3.3 thin	+ 50 - 50	+ 80 - 20	+ 1	+ 80 - 20
4.1 present	+ 50 - 50	+ 20 - 80	+ 33.3 - 66.7	+ 80 - 20
4.2 indistinct	+ 1	+ 1	+ 1	+ 1
4.3 rel. far apart on dist. 1/2	+ 1	+ 1	+ 1	- 1
4.4 light	+ 25 - 75	+ 20 - 80	+ 33.3 - 66.7	+ 40 - 60





5.1	irregular	+ 50 - 50	- 1	+ 66.7 - 33.3	- 1
5.2	feather and step	+ 1	+ 50 - 50	+ 50 - 50	+ 1
	+	+ 9.5	+ 9.3	+ 10.5	+ 9.4
Total	-	- 4.5	- 4.7	- 3.5	- 4.6
	+	+ 68	66.42	+ 75	+ 67
%	-	- 32	33.57	- 25	- 33
Score		+ 36	+ 32.85	+ 50	+ 34

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Possible + 50 - Sub. Indirect Percussion

Although the scar is somewhat like a hammerstone flake (flat and thin) it has the two distinctive ribs near the distal edge similar to billet flakes.



## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C01083	Main Flake Scar # R-10	Edge Treatment on Same Scar	Notes
1.1 Scar Size	substantial	minimal (1)	1. Edge Unit # 2 reverse side coded from scars 9 to 18.
2.1 Edge Sharpness		intermediate to dull	
2.2 Margin Damage		heavy	
2.3 Microflakes		heavy	
2.4 Proximal Edge Morphology		straight	
3.1 Negative Bulb of Force	indistinct		
3.2 Bulb to Scar Transition Angle	gradual		
3.3 Flake Thickness	thin		
4.1 Presence or Absence of Ribs	present		
4.2 Distinctiveness of Ribs	indistinct		
4.3 Rib Spacing And Distribution	rel. far apart on distal 1/2		
4.4 Tearing	light		
5.1 Scar Shape at Distal Edge	irregular	predominantly straight, some rounded	
5.2 Scar Termination at Distal Edge	feather	predominantly step, some feather	



2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar, C01083 Scar R10 - Main Scar

	Prehistoric C01083 R10	AB16-7(a) Mod./Sub. Perc. Thin Hammerstone	AB7-10 Sub. Perc. Thin Billet	AB11-11 Sub. Indirect Percussion
1.1	Substantial	+ 1	+ 1	+ 1
2.1				
2.2				
2.3				
2.4				
3.1	indistinct	+ 1	+ 75 - 25	+ 66.7 - 33.3
3.2	gradual	+ 1	+ 75 - 25	+ 1
3.3	thin	+ 80 - 20	+ 50 - 50	+ 1
4.1	present	+ 80 - 20	+ 50 - 50	+ 33.3 - 66.7
4.2	indistinct	+ 1	+ 1	+ 1
4.3	rel. far apart on distal 1/2	- 1	+ 1	+ 1
4.4	light	+ 40 - 60	+ 25 - 75	+ 33.3 - 66.7





5.1	irregular	- 1	+ 50 - 50	+ 66.7 - 33.3
5.2	feather	+ 40 - 60	+ 25 - 75	+ 1
	+	+ 6.4	+ 6.50	+ 8.0
Total	-	- 3.6	- 3.50	- 2.0
	+	+ 64	+ 65	+ 80
%	-	- 36	- 35	- 20
Score		+ 28	+ 30	+ 60

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Possible + 60 Sub. Indirect Percussion



2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar, C01083 Edge Unit # 2 (Scar R10)

Prehistoric C01083 Edge Unit # 2		AB14-16(b) Min. Perc. Shape Hammerstone		AB6-13(b) Mod. Shear Shape with P.F.		AB6-13(a) Min. Shear Shape with P.F.		AB10-1(a) Min. Rub Buffet Hammerstone		AB10-1(b) Min. Rub/Buffet Billet	
1.1	minimal	+ 1		+ 1		+ 1		+ 1		+ 1	
2.1	intermediate to dull	+ 83.3 - 16.7		- 1		+ 66.7 - 33.3		+ 1		+ 1	
2.2	heavy	+ 1		+ 1		- 1		+ 1		- 1	
2.3	heavy	- 1		+ 1		+ 66.7 - 33.3		- 1		- 1	
2.4	straight	+ 83.3 - 16.6		+ 1		+ 1		+ 1		+ 1	
3.1											
3.2											
3.3											
4.1											
4.2											
4.3											
4.4											



5.1	pred. straight some rounded	+ 1	+ 50 - 50	+ 50 - 50	+ 75 - 25	- 1
5.2	pred. step some feather	+ 1	+ 1	+ 50 - 50	+ 1	+ 50 - 50
Total		+ 5.67	+ 5.50	+ 4.33	+ 5.75	+ 3.5
	-	- 1.33	- 1.50	- 2.67	- 1.25	- 3.5
		+ 81	+ 79	+ 62	+ 82	+ 50
%		- 19	- 21	- 38	- 18	- 50
Score		+ 62	+ 58	+ 24	+ 64	0

### 2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

- Possible + 64 - min. rub buffet hammerstone
- Possible + 62 - min. perc. shape hammerstone
- Possible + 58 - mod. shear shape with p.f.

Based on Unit 1 which is rub/buffet, this would appear to be the likely choice for this unit as well. Some slight shearing may be present on the base (scars 014 - 018).



## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C01083	Main Flake Scar # R-19	Edge Treatment on Same Scar	Notes
1.1 Scar Size	substantial	(1)	1. Edge Unit # 3 Reverse side coded from scars # 18-22. (See scar 0-12)
2.1 Edge Sharpness			
2.2 Margin Damage			
2.3 Microflakes			2. Mostly on scars 20-21 only used to remove inter- flake ridges on larger scars.
2.4 Proximal Edge Morphology			
3.1 Negative Bulb of Force	distinct		
3.2 Bulb to Scar Transition Angle	gradual		
3.3 Flake Thickness	thin		
4.1 Presence or Absence of Ribs	present		
4.2 Distinctiveness of Ribs	indistinct		
4.3 Rib Spacing And Distribution	rel. far apart on distal 1/2		
4.4 Tearing	0		
5.1 Scar Shape at Distal Edge	irregular		
5.2 Scar Termination at Distal Edge	feather		





2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar R19, C01083

Prehistoric C01083 R19		AB16-7(a)	AB7-10 Sub. Perc. Thin Billet	Ab11-11 Sub. Indirect Percussion
1.1	substantial	+1	+ 1	+ 1
2.1				
2.2				
2.3				
2.4				
3.1	distinct	- 1	+ 25 - 75	+ 33.3 - 66.7
3.2	gradual	+ 1	+ 75 - 25	+ 1
3.3	thin	+ 80 - 20	+ 50 - 50	+ 1
4.1	present	+ 80 - 20	+ 50 - 50	+ 33.3 - 66.6
4.2	indistinct	+ 1	+ 1	+ 1
4.3	rel. far apart on distal 1/2	- 1	+ 1	+ 1
4.4	0	+ 60 - 40	+ 75 - 25	+ 66.7 - 33.3



5.1	irregular	- 1	+ 50 - 50	+ 66.7 - 33.3
5.2	feather	+ 40 - 60	+ 25 - 75	+ 1
Total				
+		+ 5.60	+ 6.5	+ 8.0
-		- 4.40	- 3.5	- 2.0
+		+ 56	+ 65	+ 80
%				
-		- 44	- 35	- 20
Score				
		+ 12	+ 30	+ 60

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Possible + 60 - Sub. Indirect Perc.



## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C01083	Main Flake Scar # R23	Edge Treatment on Same Scar	Notes
1.1 Scar Size	moderate	(1) and (2)	1. Edge Unit # 1 coded from scars 1 to 7 and 22 to 26 (scar 05).
2.1 Edge Sharpness			
2.2 Margin Damage			
2.3 Microflakes			2. Used to remove inter-flake ridges from larger scars resulting from substantial percussion flaking.
2.4 Proximal Edge Morphology			
3.1 Negative Bulb of Force	indistinct		3. Need to rotate under light in order to observe.
3.2 Bulb to Scar Transition Angle	gradual		
3.3 Flake Thickness	thin		4. The ribs appear to be evenly dist. but the bulb of percussion has been removed - it is most probable that originally they were on the distal 1/2.
4.1 Presence or Absence of Ribs	(3) present		
4.2 Distinctiveness of Ribs	indistinct		
4.3 Rib Spacing And Distribution	(4) rel. far apart on distal 1/2		
4.4 Tearing	0		
5.1 Scar Shape at Distal Edge	rel. straight		
5.2 Scar Termination at Distal Edge	feather		





2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar R23, C01083

	Prehistoric C01083 Scar R23	AB5-9(b) Mod. Perc. Thin Billet	AB11-11 Sub. Indirect Perc.	AB16-7(a) Mod./Sub. Perc. Thin Hammerstone
1.1	moderate	+ 1	- 1	+ 1
2.1				
2.2				
2.3				
2.4				
3.1	indistinct	+ 80 - 20	+ 66.7 - 33.3	+ 1
3.2	gradual	+ 80 - 20	+ 1	+ 1
3.3	thin	+ 80 - 20	+ 1	+ 80 - 20
4.1	present	+ 20 - 80	+ 33.3 - 66.7	+ 80 - 20
4.2	indistinct	+ 1	+ 1	+ 1
4.3	rel. far apart on distal 1/2	+ 1	+ 1	- 1
4.4	0	+ 80 - 20	+ 66.7 - 33.3	+ 60 - 40



5.1	rel. straight	+ 60 - 40	- 1	+ 60 - 40
5.2	feather	+ 50 - 50	+ 1	+ 40 - 60
Total				
	+	+ 7.50	+ 6.67	+ 7.2
	-	- 2.50	- 3.33	- 2.8
	+	+ 75	+ 67	+ 72
%				
	-	- 25	- 33	- 28
Score		+ 50	+ 34	+ 44

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Possible + 50 Mod. Perc. Thin Billet

This scar may represent the distal portion of an originally much larger scar.



2.4 Summary of Behavior Units (Morpho-Units) Identified on Artifact C01083 (Jordan)

Main Scar #	Edge Unit Scar #	Rating on Scoring Scale	Final +/- Score	Behavior Unit	Experimental Control Specimen
05	Edge Unit 1	highly probable	+ 72	sub. press. thin with p.f.	AB8-6
		indeterminate	+ 16	min. rub buffet with hammerstone	AB10-1(b)
012		highly probable	+ 70	sub. pressure thin with p.f.	AB8-6
	Edge Unit 3	possible	+ 64	min. rub/buffet hammerstone (a small area of shearing on R15)	AB10-1(a)
024		possible	+ 42	sub. press. thin with p.f.	AB5-9
026		possible	+ 56	sub. press. thin with p.f.	AB5-9
R6	Edge Unit 2	possible	+ 50	sub. indirect percussion	AB11-11
R10		possible	+ 60	sub. indirect percussion	AB11-11
		possible	+ 64	min. rub buffet hammerstone	AB10-1(a)
R19		possible	+ 60	sub. indirect percussion	AB11-11
R23		possible	+ 60	moderate perc. thin billet	AB10-1(b)





### 3.0 Interpretation of Behavior (Technological) Units

(a) Transforming Behavior Units into Production Units: C01083

#### 3.1 Function of Percussion Thinning/Shaping Units (moderate to very substantial size scars on specimen)

- (a) Substantial Indirect Percussion: These flakes (R6, R10, and R19) were used to remove large face paring or thinning flakes. Production Unit Code is 40:5, 51, 51.
- (b) Moderate Percussion Thin Billet: Only one flake (023) was identified for this face paring unit. Production Unit Code is 40:3, 41, 51.

#### 3.2 Function of Pressure Thinning/Shaping Units (minimal to substantial size scars on specimen)

- (a) Substantial Pressure Thinning with a Pressure Flaker: Scars in the vicinity of 012 and 026. In this case the function of the face paring was to contour the margin and create or increase the edge angle on the flat flake core surface to make a bifacial instead of a unifacial edge. Production Unit Code is 31:4, 42, 51.

#### 3.3 Function of Edge Units (minimal to very minimal size scars on specimen)

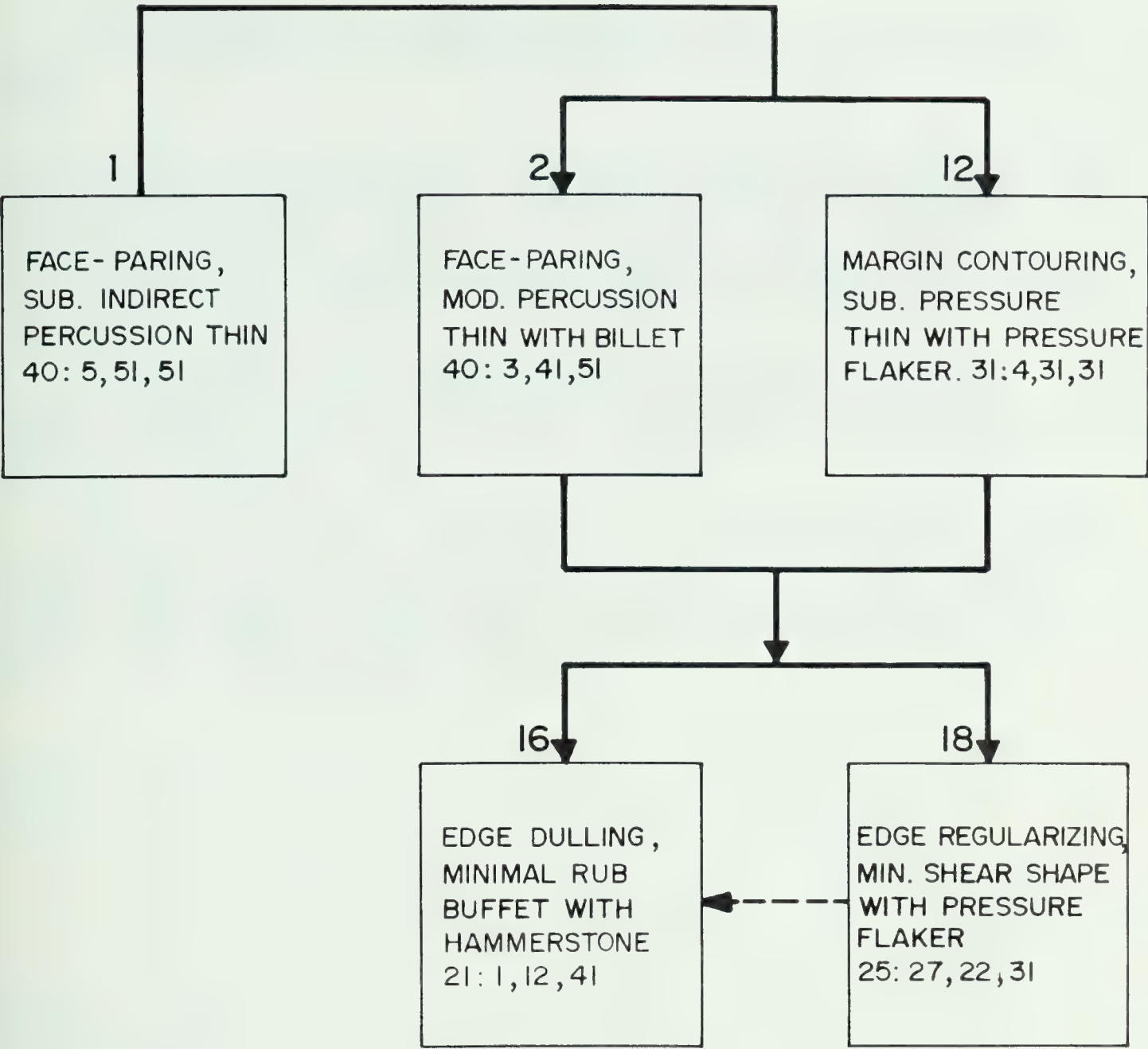
Edge units, because of their limited number of morphological attributes which are often very similar, are hard to identify in some cases. On this specimen, Edge Unit #1 has been identified as min. rub/buffet with a hammerstone, production unit code 20-1-12-41. Edge Unit 2 has also been identified as min. rub/buffet hammerstone. Some shearing may also be present especially on scars 014-018. Production Unit Code is 21:1, 20, 31. Finally, edge unit 3 has been identified as min. rub buffet hammerstone - Production Unit Code is 20:1, 12, 41 (same as 1 & 2 above).

Shearing units are used to strengthen, reduce and center the edge of the artifact all in one movement around the edge from one face to another utilizing a pressure flaker (scars R14, 15, 18).

Rub buffet units consist of dragging the tool such as a hammerstone or billet across the edge of the artifact. This blunts the edge and strengthens the platforms. Flat scars with little overlapping are removed (i.e., scars R2, R7).







(b) Reconstructing Sequencing of Production Units: C01083

3.4 Flow Diagram of Production Units (above)



### 3.5 Description and Discussion of Technological Grammar Found on Artifact

The prehistoric biface was manufactured from a large flake with only one large remnant scar (O-23) remaining from the original flake core.

The obverse side of the artifact has at least one moderate billet percussion shaping flake which is likely a remnant left from an earlier stage of manufacture. The billet work was followed by substantial pressure thinning on the obverse face as evident from scars 08, 09, 011, 012, 013, 026, etc., which was used to contour the margin by increasing the edge angle and creating a bifacial edge on the flake core.

On the reverse face where a larger amount of face paring was needed, substantial indirect percussion was used to remove large thinning flakes (scars R6, R10, R19). Some earlier billet thinning work is also present on this face (i.e., scar R23).

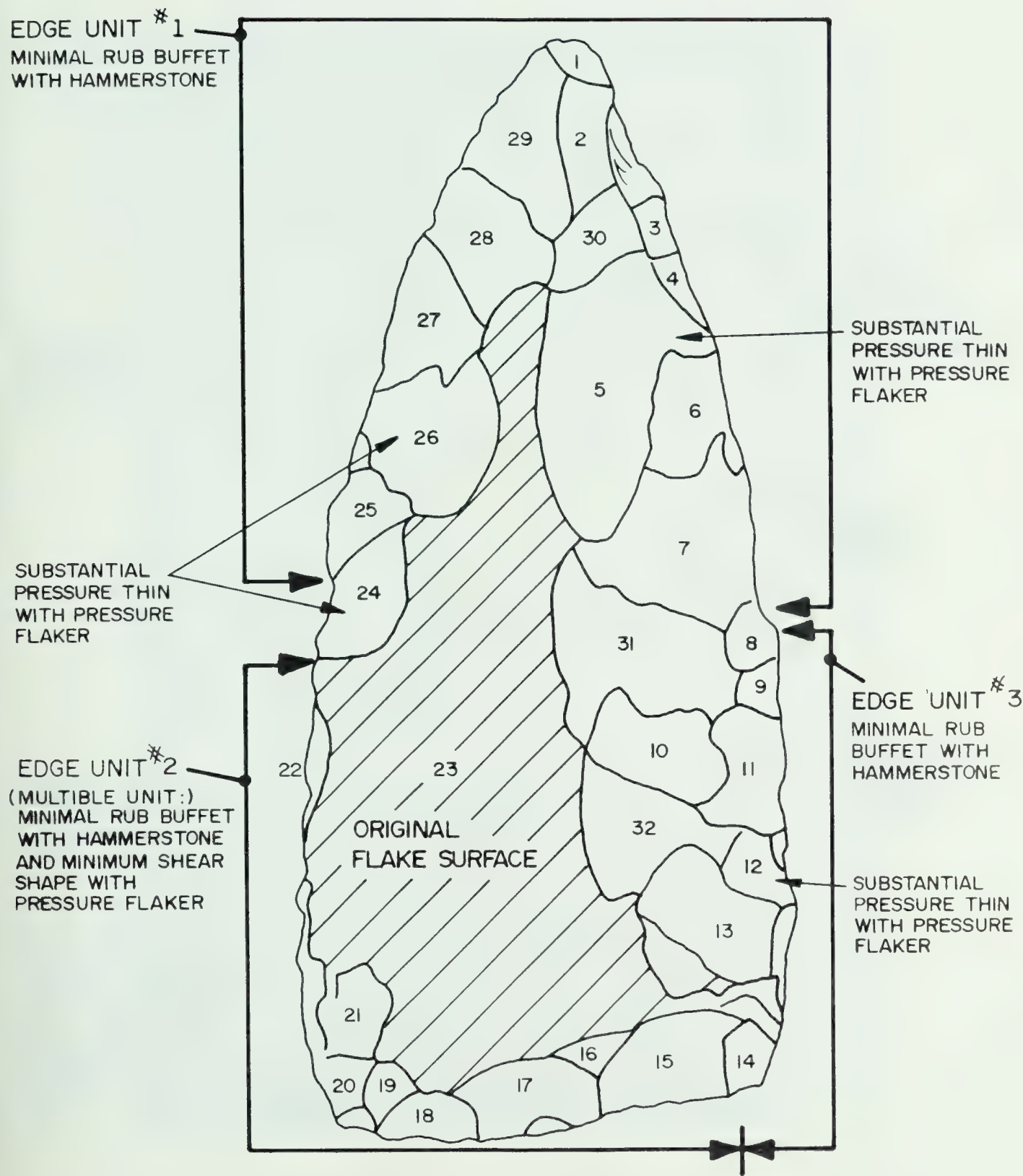
The artifact margins were blunted and strengthened by means of a rub/buffet with possibly a small hammerstone. This strengthened the edge. Regularizing and centering of the edge was accomplished with a shearing movement around the edge from one face to another, primarily on the base, utilizing a pressure flaker.



DeHa -8 ————— CO 1083

OBVERSE FACE

FIGURE 34



SCARS SELECTED FOR ANALYSIS No.'s 5, 24, & 26.

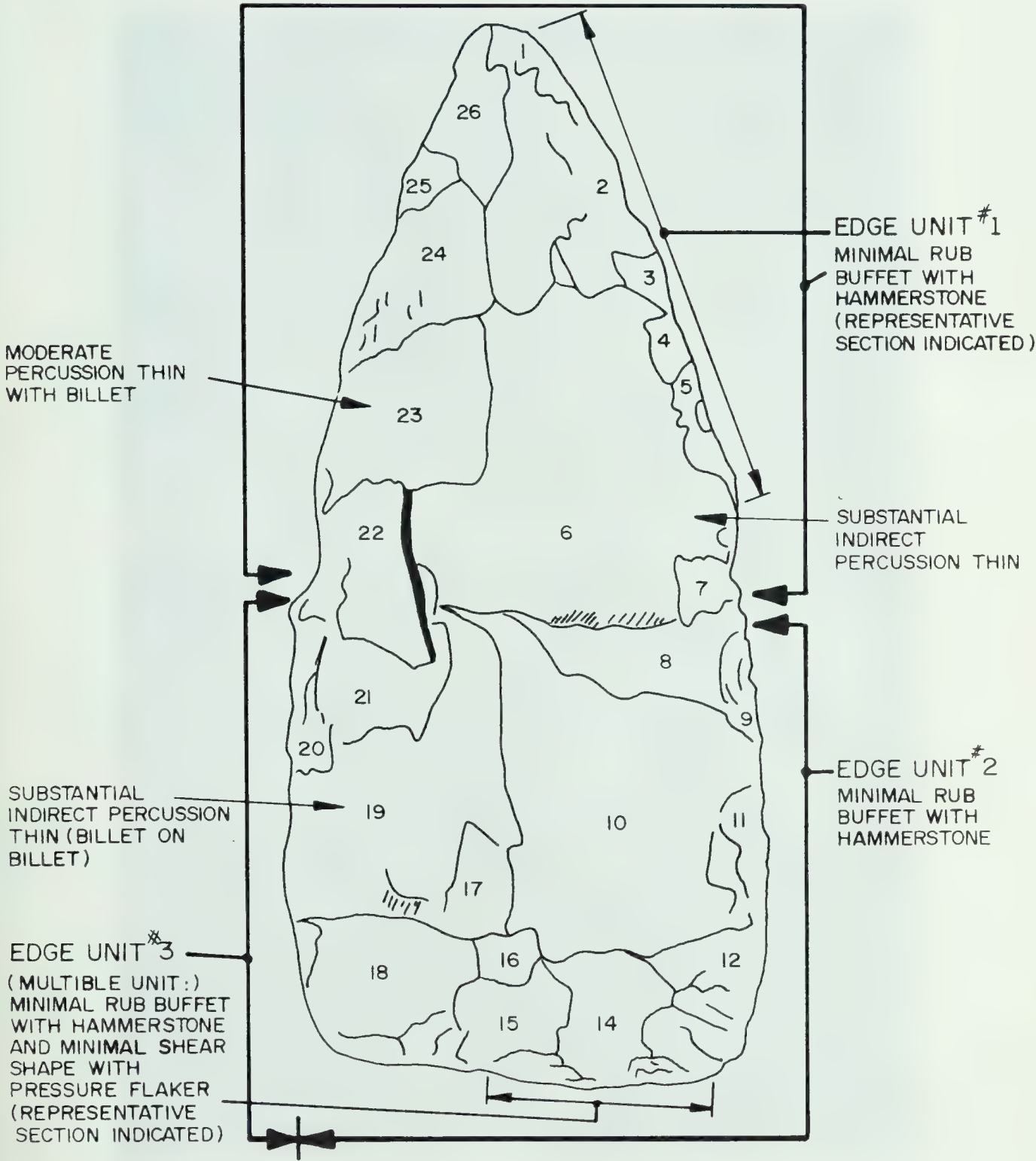
0 5 10 20mm





REVERSE FACE

FIGURE 35





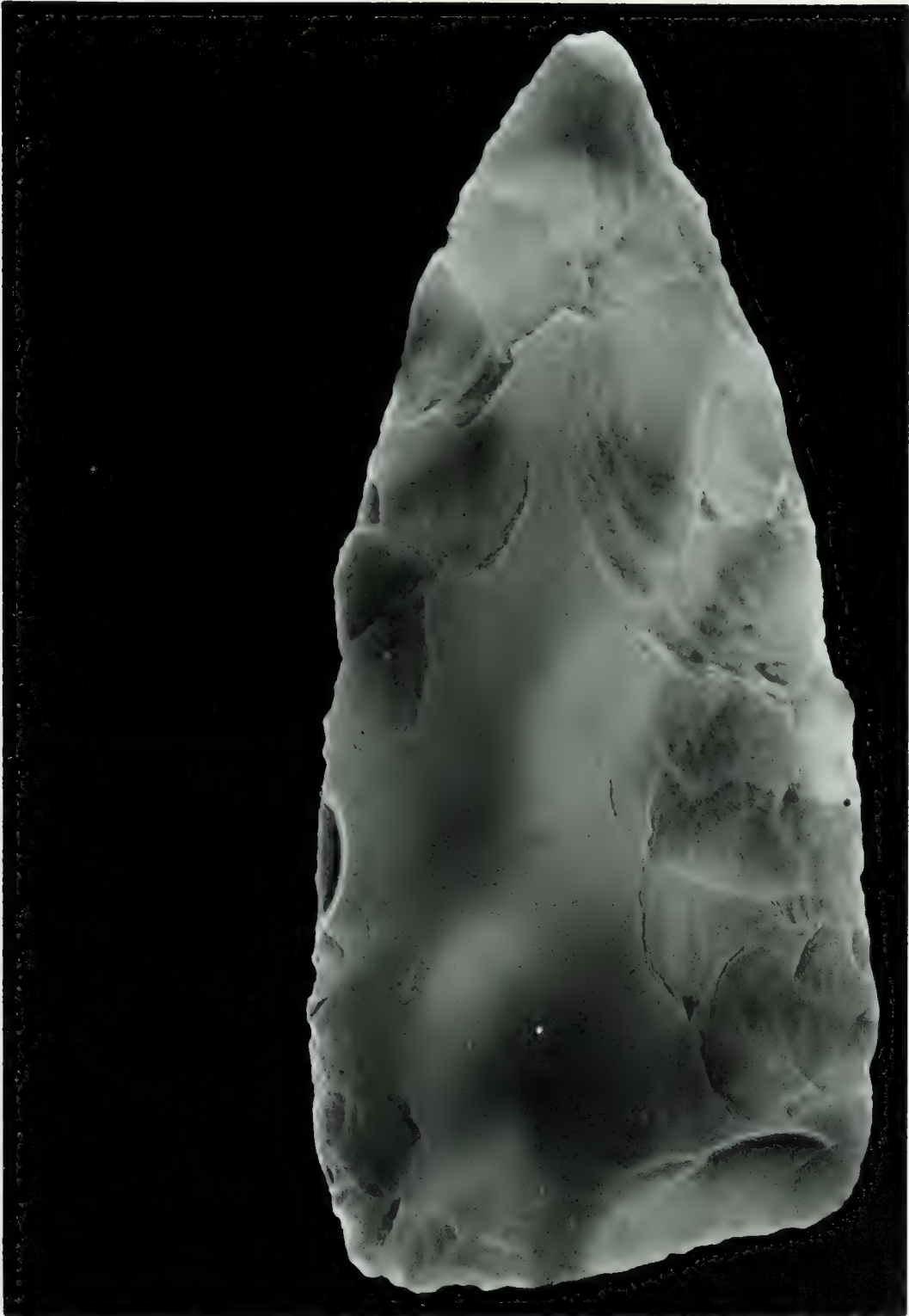


Plate 44: Prehistoric Artifact C01083, Obverse Face.





Plate 45: Prehistoric Artifact C01083, Reverse Face.





Table 60: Form for Coding and Interpreting  
Prehistoric Artifacts

- 1.0 Prehistoric Artifact Identification
- 1.1 Artifact Face: Obverse and Reverse
- 1.2 Prehistoric Specimen Provenience: DeHa-8, Jordan Site
- 1.3 Specimen Catalogue #: C01085
- 1.4 Photographic Plate Identification: Roll 2 B3 #34A and  
Roll 3 B3 #24
- 1.5 Standard Artifact Description:
- 1.6 Raw Material: Welded Tuff
- 1.7 Shape/Artifact Class: Biface
- 1.8 Flaking (Bifacial/Unifacial): Bifacial
- 1.9 Metric Size: length - 11.0 cm  
width - 5.0 cm  
thickness - 1.2 cm
- 1.10 Form/Morphology Description:

This specimen is a preform or rough out of a broad lanceolate shaped biface with a distinctive convex base. It is manufactured from a bifacially retouched flake-core and several original flake-core surfaces remain intact. Notable on the specimen are two areas of distinctive platform crushing and the grinding along the lateral sides. The base, however, has a sharp edge.





## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C01085	Main Flake Scar # 07	Edge Treatment on Same Scar	Notes
1.1 Scar Size	substantial	(1) minimal	1. Edge Unit # 1 coded from scars 1 to 9 on obverse face and scars 18-23 reverse face. (See scar R25)
2.1 Edge Sharpness		intermediate to sharp	
2.2 Margin Damage		heavy	
2.3 Microflakes		heavy	2. Need to rotate under light in order to see ribs.
2.4 Proximal Edge Morphology		straight with convex projections	3. This scar took off much more material than probably was intended.
3.1 Negative Bulb of Force	indistinct (4)		
3.2 Bulb to Scar Transition Angle	gradual		
3.3 Flake Thickness	thick (3)		4. Main percussion bulb area has been removed.
4.1 Presence or Absence of Ribs	present		
4.2 Distinctiveness of Ribs	(2) indistinct		
4.3 Rib Spacing And Distribution	far apart on distal 1/2		
4.4 Tearing	light		
5.1 Scar Shape at Distal Edge	rounded	straight and rounded	
5.2 Scar Termination at Distal Edge	feather and step	step and feather	



2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar 07, C01085

	Prehistoric C01085 Scar 07	AB16-7(a) Mod./Sub. Perc. Thin Hammerstone	AB7-10 Sub. Perc. Thin Billet	AB11-11 Sub. Indirect Percussion
1.1	substantial	+ 1	+ 1	+ 1
2.1				
2.2				
2.3				
2.4				
3.1	indistinct	+ 1	+ 75 - 25	+ 66.7 - 33.3
3.2	gradual	+ 1	+ 75 - 25	+ 1
3.3	thin	+ 80 - 20	+ 50 - 50	- 1
4.1	0	+ 20 - 80	+ 50 - 50	+ 33.3 - 66.6
4.2	n/a	n/a	n/a	+ 1
4.3	n/a	n/a	n/a	+ 1
4.4	light	+ 40 - 60	+ 25 - 75	+ 33.3 - 66.7



5.1	rounded	+ 40 - 60	+ 50 - 50	+ 33.3 - 66.7
5.2	feather and step	+ 1	+ 1	+ 50 - 50
Total	+	+ 5.8	+ 5.25	+ 6.17
	-	- 2.2	- 2.75	- 3.83
%	+	+ 72.5	+ 66	+ 62
	-	- 27.5	- 34	- 38
Score		+ 45.0	+ 32	+ 24

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Possible + 45.0 Mod./Sub. Perc. Thin Hammerstone





2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar C01085 Edge Unit # 1

	Prehistoric C01085 Edge Unit 1	AB14-16(b)		AB10-1		AB10-1(b)		AB2-2(b)		AB6-13(b)	
		Min.	Perc. Shape Hammerstone	Min.	Rub/Bufet Hammerstone	Min.	Rub/Bufet Billet	Min.	Press. Rub With P.F.	Mod. Shear Shape with P.F.	
1.1	minimal		+ 1		+ 1		+ 1		+ 1		+ 1
2.1	intermediate to sharp		+ 1		+ 1		+ 1		+ 50 - 50		- 1
2.2	heavy		+ 1		+ 1		- 1		+ 1		+ 1
2.3	heavy		- 1		- 1		- 1		+ 1		+ 1
2.4	straight with convex project		+ 83.3 - 16.6		+ 1		+ 1		+ 84 - 16		+ 1
3.1											
3.2											
3.3											
4.1											
4.2											
4.3											
4.4											



5.1	straight and rounded	+ 1	+ 75 - 25	- 1	+ 1	+ 50 - 50
5.2	step and feather	+ 1	+ 1	+ 50 - 50	+ 1	+ 1
	+	+ 5.83	+ 5.75	+ 3.5	+ 6.34	+ 5.50
Total	-	- 1.17	- 1.25	- 3.5	- .66	- 1.50
	+	+ 83	+ 82	+ 50	+ 91	+ 79
%	-	- 17	- 18	- 50	- 9	- 21
Score		+ 66	+ 64	0	+ 82	+ 58

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Highly Probable + 82 Minimum Pressure Rub with P.F.



## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C01085	Main Flake Scar # 011	Edge Treatment on Same Scar	Notes
1.1 Scar Size	minimum	very minimum to minimum (1)	1. Edge Unit 2 Coded from scars 10-13 obverse face and scars 15-17 reverse face. It is probable that the reverse face served as the platform for the unit.  2. Very hard to see except under a strong light.
2.1 Edge Sharpness		sharp	
2.2 Margin Damage		heavy	
2.3 Microflakes		heavy	
2.4 Proximal Edge Morphology		straight with some flat curved notches and convex projections	
3.1 Negative Bulb of Force	indistinct		
3.2 Bulb to Scar Transition Angle	gradual		
3.3 Flake Thickness	thin		
4.1 Presence or Absence of Ribs	(2) present		
4.2 Distinctiveness of Ribs	indistinct		
4.3 Rib Spacing And Distribution	rel. far apart		
4.4 Tearing	0		
5.1 Scar Shape at Distal Edge	straight	pred. straight	
5.2 Scar Termination at Distal Edge	step	pred. step	



2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar 011, C01085

	Prehistoric C01085 Scar 011	AB5-9(a)		AB9-5(b)		AB16-7(b)		AB3-17	
		Minimum Perc. Thin Billet		Min. Press. Thin with P.F.		Min. Perc. Thin Hammerstone		Mod. Perc. Shape/Hammerstone	
1.1	minimum	+ 1		+ 1		+ 1		+ 66.7 - 33.3	
2.1									
2.2									
2.3									
2.4									
3.1	indistinct	+ 1		+ 1		+ 1		+ 1	
3.2	gradual	+ 1		+ 1		+ 1		+ 1	
3.3	thin	+ 88.9 - 11.1		+ 1		+ 1		+ 1	
4.1	present	- 1		+ 22.2 - 77.8		- 1		+ 33.3 - 66.7	
4.2	indistinct	n/a		+ 1		n/a		+ 1	
4.3	rel. far apart & evenly dist.	n/a		- 1		n/a		+ 1	
4.4	0	+ 1		+ 1		+ 1		+ 66.7 - 33.3	





5.1	straight	+ 22 - 78	+ 55.6 - 44.4	+ 50 - 50	+ 1
5.2	step	+ 44.5 - 55.5	+ 22.2 - 77.8	+ 16.6 - 83.4	+ 1
	+	+ 5.56	+ 7.0	+ 5.67	+ 8.67
Total	-	- 2.44	- 3.0	- 2.33	- 1.33
	+	+ 70	+ 70	+ 71	+ 87
%	-	- 30	- 30	- 29	- 13
Score		+ 40	+ 40	+ 42	+ 74

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Highly Probable + 74 Mod. Perc. Shape Hammerstone



2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar C01085, Edge Unit 2 (Coded on Scar 011 Form)

Prehistoric C01085 Edge Unit 2	AB6-13(b) Mod. Shear Shape with P.F.	AB5-9(a) Min. Perc. Thin Billet	AB15-18(b) Min. Perc. Shape Billet	AB2-2(b) Min. Press. Rub with P.F.	AB16-7(b) Min. Perc. Thin Hammerstone
1.1 very minimum to minimum	+ 1	+ 1	+ 1	+ 1	+ 1
2.1 sharp	+ 1	+ 1	+ 1	+ 1	+ 1
2.2 heavy	+ 1	+ 1	+ 1	+ 1	+ 66 - 34
2.3 heavy	+ 1	+ 1	+ 80 - 20	+ 1	+ 50 - 50
2.4 straight convex project	+ 1	+ 1	+ 1	+ 84 - 16	+ 1
3.1					
3.2					
3.3					
4.1					
4.2					
4.3					
4.4					



5.1	pred. straight	+ 44 - 56	+ 22 - 88	+ 80 - 20	+ 50 - 50	+ 50 - 50
5.2	pred. step	+ 22.3 - 77.7	+ 44.5 - 55.5	+ 20 - 80	+ 50 - 50	+ 16.6 - 83.4
Total		+ 5.67	+ 5.67	+ 5.80	+ 5.84	+ 4.83
	-	- 1.33	- 1.33	- 1.20	- 1.16	- 2.17
%		+ 81	+ 81	+ 83	+ 83	+ 69
	-	- 19	- 19	- 17	- 17	- 31
Score		+ 62	+ 62	+ 66	+ 66	+ 38

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Scores too close together to identify - may be shear shaping or pressure rub as these are present elsewhere on the artifact.





## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C01085	Main Flake Scar # 025	Edge Treatment on Same Scar	Notes
1.1 Scar Size	very sub.	minimal (1)	1. Edge Unit 3 coded from obverse face scars 14-22 and reverse face scars 1-14 (See scar #R13)
2.1 Edge Sharpness		intermediate to sharp	
2.2 Margin Damage		heavy (2)	
2.3 Microflakes		heavy	2. Two areas have exten- sively crushed platforms similar to failed areas on experimental specimen AB6-13 side b mod. shear shape with P.F.
2.4 Proximal Edge Morphology		follows exist. edge - straight	
3.1 Negative Bulb of Force	indistinct		
3.2 Bulb to Scar Transition Angle	gradual		3. Too much of the original percussion bulb and platform are missing to code rib distribution.
3.3 Flake Thickness	thin		
4.1 Presence or Absence of Ribs	present		
4.2 Distinctiveness of Ribs	indistinct		
4.3 Rib Spacing And Distribution	n/a (3)		
4.4 Tearing	light		
5.1 Scar Shape at Distal Edge	irregular	straight & irregular	
5.2 Scar Termination at Distal Edge	feather	step and feather	



2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar 025, C01025

	Prehistoric C01025 Scar 025	AB7-10 Sub. Perc. Thin Billet	AB11-11 Sub. Indirect Percussion	AB16-7(a) Sub./Mod. Perc. Thin Hammerstone
1.1	very sub.	+ 1	+ 1	+ 1
2.1				
2.2				
2.3				
2.4				
3.1	indistinct	+ 75 - 25	+ 66.7 - 33.3	+ 1
3.2	gradual	+ 75 - 25	+ 1	+ 1
3.3	thin	+ 50 - 50	+ 1	+ 80 - 20
4.1	present	+ 50 - 50	+ 33.3 - 66.7	+ 80 - 20
4.2	indistinct	+ 1	+ 1	+ 1
4.3	n/a	n/a	n/a	n/a
4.4	light	+ 25 - 75	+ 33.3 - 66.7	+ 40 - 60



5.1	irregular	+ 50 - 50	+ 66.7 - 33.3	- 1
5.2	feather	+ 25 - 75	+ 1	+ 40 - 60
Total	+	+ 5.5	+ 7	+ 6.40
	-	- 3.5	- 2	- 2.60
%	+	+ 61	+ 78	+ 71
	-	- 39	- 22	- 29
Score		+ 22	+ 56	+ 42

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Possible + 56 Sub. Indirect Percussion



2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar C01025, Edge Unit #3

Prehistoric C01025 Edge Unit 3	AB14-16(b)		AB6-13(a)		AB6-13(b)		AB10-1(a)		AB2-2(b)	
	Min. Per. Shape Hammerstone		Min. Shear Shape P.F.		Mod./Sub. Shear Shape P.F.		Min. Rub/Buffer Hammerstone		Min. Press. Rub with P.F.	
1.1	minimal	+ 1	+ 1		+ 1		+ 1		+ 1	
2.1	intermediate to sharp	+ 1	+ 1		- 1		+ 1		+ 50 - 50	
2.2	heavy	+ 1	- 1		+ 1		+ 1		+ 1	
2.3	heavy	- 1	+ 66.7 - 33.3		+ 1		- 1		+ 1	
2.4	follows edge straight	+ 83.3 - 16.6	+ 1		+ 1		+ 1		+ 84 - 16	
3.1										
3.2										
3.3										
4.1										
4.2										
4.3										
4.4										





5.1	straight and irregular	+ 33.3 - 66.7	+ 1	+ 1	+ 75 - 25	+ 50 - 50
5.2	step and feather	+ 1	+ 1	+ 1	+ 1	+ 1
	+	+ 5.16	+ 5.67	+ 6	+ 5.75	+ 5.84
Total	-	- 1.84	- 1.33	- 1	- 1.25	- 1.16
	+	+ 74	+ 81	+ 86	+ 82	+ 83
%	-	- 26	- 19	- 14	- 18	- 17
Score		+ 48	+ 62	+ 72	+ 64	+ 66

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Highly Probable + 72 Mod./Sub. Shear Shape with P.F.  
(see scars R4 to R11)



## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C01085	Main Flake Scar # R13	Edge Treatment on Same Scar	Notes
1.1 Scar Size	sub.	(1)	1. Edge Unit 3 coded from reverse face scars 1-14 and obverse face scars 14-22. (See scar 0-25)
2.1 Edge Sharpness			
2.2 Margin Damage			
2.3 Microflakes			
2.4 Proximal Edge Morphology			
3.1 Negative Bulb of Force	indistinct		
3.2 Bulb to Scar Transition Angle	gradual		
3.3 Flake Thickness	thin		
4.1 Presence or Absence of Ribs	0		
4.2 Distinctiveness of Ribs	n/a		
4.3 Rib Spacing And Distribution	n/a		
4.4 Tearing	0		
5.1 Scar Shape at Distal Edge	rounded		
5.2 Scar Termination at Distal Edge	feather		



2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar R13, C01085

	Prehistoric C01085 R13	AB16-7(a) Mod./Sub. Perc. Thin Hammerstone	AB7-10 Sub. Perc. Thin Billet	AB11-11 Sub. Indirect Percussion
1.1	sub.	+ 1	+ 1	+ 1
2.1				
2.2				
2.3				
2.4				
3.1	indistinct	+ 1	+ 75 - 25	+ 66.7 - 33.3
3.2	gradual	+ 1	+ 75 - 25	+ 1
3.3	thin	+ 80 - 20	+ 50 - 50	+ 1
4.1	0	+ 20 - 80	+ 50 - 50	+ 66.7 - 33.3
4.2	n/a	n/a	n/a	n/a
4.3	n/a	n/a	n/a	n/a
4.4	0	+ 60 - 40	+ 75 - 25	+ 66.7 - 33.3





5.1	rounded	+ 40 - 60	+ 50 - 50	+ 33.3 - 66.7
5.2	feather	+ 40 - 60	+ 25 - 75	+ 1
Total	+	+ 5.4	+ 5.0	+ 6.33
	-	- 2.6	- 3.0	- 1.67
%	+	+ 68	+ 63	+ 79
	-	- 32	- 37	- 21
Score		+ 36	+ 26	+ 58

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Possible + 58 Sub. Indirect Percussion

This scar represents the distal end remnant portion of a much larger scar (note the extreme scar width at the edge). Therefore, the identification is based on a partial morphology only.



## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C01085	Main Flake Scar # R18	Edge Treatment on Same Scar	Notes
1.1 Scar Size	sub.	(1)	1. See scar R25 for edge unit for this scar.  2. This scar was produced by the same production unit as scar R25.
2.1 Edge Sharpness			
2.2 Margin Damage			
2.3 Microflakes			
2.4 Proximal Edge Morphology			
3.1 Negative Bulb of Force	indistinct (2)		
3.2 Bulb to Scar Transition Angle	gradual		
3.3 Flake Thickness	thin		
4.1 Presence or Absence of Ribs	0		
4.2 Distinctiveness of Ribs	n/a		
4.3 Rib Spacing And Distribution	n/a		
4.4 Tearing	0		
5.1 Scar Shape at Distal Edge	straight		
5.2 Scar Termination at Distal Edge	step		



2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar R18, C01085

	Prehistoric C01085 R18	AB7-10 Sub. Perc. Thin Billet	AB16-7(a) Mod./Sub. Perc. Thin Hammerstone	AB5-9(b) Mod. Perc. Thin Billet
1.1	substantial	+ 1	+ 1	+ 1
2.1				
2.2				
2.3				
2.4				
3.1	indistinct	+ 75 - 25	+ 1	+ 80 - 20
3.2	gradual	+ 75 - 25	+ 1	+ 80 - 20
3.3	thin	+ 50 - 50	+ 80 - 20	+ 80 - 20
4.1	0	+ 50 - 50	+ 20 - 80	+ 80 - 20
4.2	n/a	n/a	n/a	n/a
4.3	n/a	n/a	n/a	n/a
4.4	0	+ 75 - 25	+ 60 - 40	+ 80 - 20



5.1	straight	- 1	+ 60 - 40	+ 60 - 40
5.2	feather	+ 25 - 75	+ 40 - 60	+ 50 - 50
Total				
+		+ 4.5	+ 5.6	
-		- 3.5	- 2.4	
+		+ 56.2	+ 70.0	
%				
-		- 43.8	- 30.0	
Score		+ 12.2	+ 40.0	

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Possible + 40 Mod./Sub. Perc. Thin Hammerstone





## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C01085	Main Flake Scar # R25	Edge Treatment on Same Scar	Notes
1.1 Scar Size	sub.	(1)	1. Edge Unit 1 code from scars 18-23 reverse face and scars 1-9 obverse face. (See scar 07)
2.1 Edge Sharpness			
2.2 Margin Damage			
2.3 Microflakes			2. Production unit the same as scar R18.
2.4 Proximal Edge Morphology			
3.1 Negative Bulb of Force	indistinct (2)		
3.2 Bulb to Scar Transition Angle	gradual		
3.3 Flake Thickness	thin		
4.1 Presence or Absence of Ribs	0		
4.2 Distinctiveness of Ribs	0		
4.3 Rib Spacing And Distribution	0		
4.4 Tearing	0		
5.1 Scar Shape at Distal Edge	straight		
5.2 Scar Termination at Distal Edge	feather		



2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar R25, C01085

Prehistoric C01085 Scar R25		AB16-7(a) Mod./Sub. Perc. Thin Hammerstone		AB7-10 Sub. Perc. Thin Billet		AB11-11 Sub. Indirect Percussion	
1.1	substantial	+ 1		+ 1		+ 1	
2.1							
2.2							
2.3							
2.4							
3.1	indistinct	+ 1		+ 75 - 25		+ 66.7 - 33.3	
3.2	gradual	+ 1		+ 75 - 25		+ 1	
3.3	thin	+ 80 - 20		+ 50 - 50		+ 1	
4.1	0	+ 20 - 80		+ 50 - 50		+ 66.6 - 33.3	
4.2	n/a	n/a		n/a		n/a	
4.3	n/a	n/a		n/a		n/a	
4.4	0	+ 60 - 40		+ 75 - 25		+ 66.7 - 33.3	



5.1	straight	+ 40 - 60	- 1	- 1
5.2	step	+ 60 - 40	+ 75 - 25	- 1
Total	+	+ 5.6	+ 5.0	+ 5
	-	- 2.5	- 3.0	- 3
%	+	+ 70	+ 62.5	+ 62.5
	-	- 30	- 37.5	- 37.5
Score		+ 40	+ 35.0	+ 35.0

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Possible + 40 Mod./Sub. Perc. Thin Hammerstone





## 2.4 Summary of Behavior Units (Morpho-Units) Identified on Artifact C01085

Main Scar #	Edge Unit Scar #	Rating on Scoring Scale	Final +/- Score	Behavior Unit	Experimental Control Specimen
07		possible	+ 45.0	Mod./Sub. Percussion Thin Hammerstone	AB16-7(a)
	Edge Unit # 1	highly probable	+ 82	Minimum Pressure Rub with P.F.	AB2-2(b)
011		highly probable	+ 74	Moderate Percussion Shape Hammerstone	AB3-17
	Edge Unit # 2	n/a	n/a	Scores too close together to identify	
025		possible	+ 56	Sub. Indirect Percussion	AB11-11
	Edge Unit # 3	highly probable	+ 72	Mod./Sub. Shear Shape with P.F. (see scars R4 to R11)	AB6-13(b)
R13		possible	+ 58	Sub. Indirect Percussion	AB11-11
R18		possible	+ 40	Mod./Sub. Perc. Thin Hammerstone	AB16-7(a)
R25		possible	+ 40	Mod./Sub. Perc. Thin Hammerstone	AB16-7(a)



### 3.0 Interpretation of Behavior (Technological) Units

#### (a) Transforming Behavior Units into Production Units:

### 3.1 Function of Percussion Thinning/Shaping Units (moderate to very substantial size scars on specimen)

- (a) Substantial Indirect Percussion Thin Identification scars 025, R13: This unit is used for face paring (thinning flakes). Production Unit Code 40:5, 51, 51.
- (b) Substantial Percussion Thin with Hammerstone: This behavior unit was used on the prehistoric specimen for face paring or substantial thinning of the artifact. Production Unit Code 40:4, 41, 41.
- (c) Moderate Percussion Shape with Hammerstone: These behavior units were used on the base of the specimen to move in the margin of the artifact (i.e., to control the outline shape of the artifact rather than just thin it). Production Unit Code 33:3, 42, 41.

### 3.2 Function of Pressure Thinning/Shaping Units (minimal to substantial size scars on specimen)

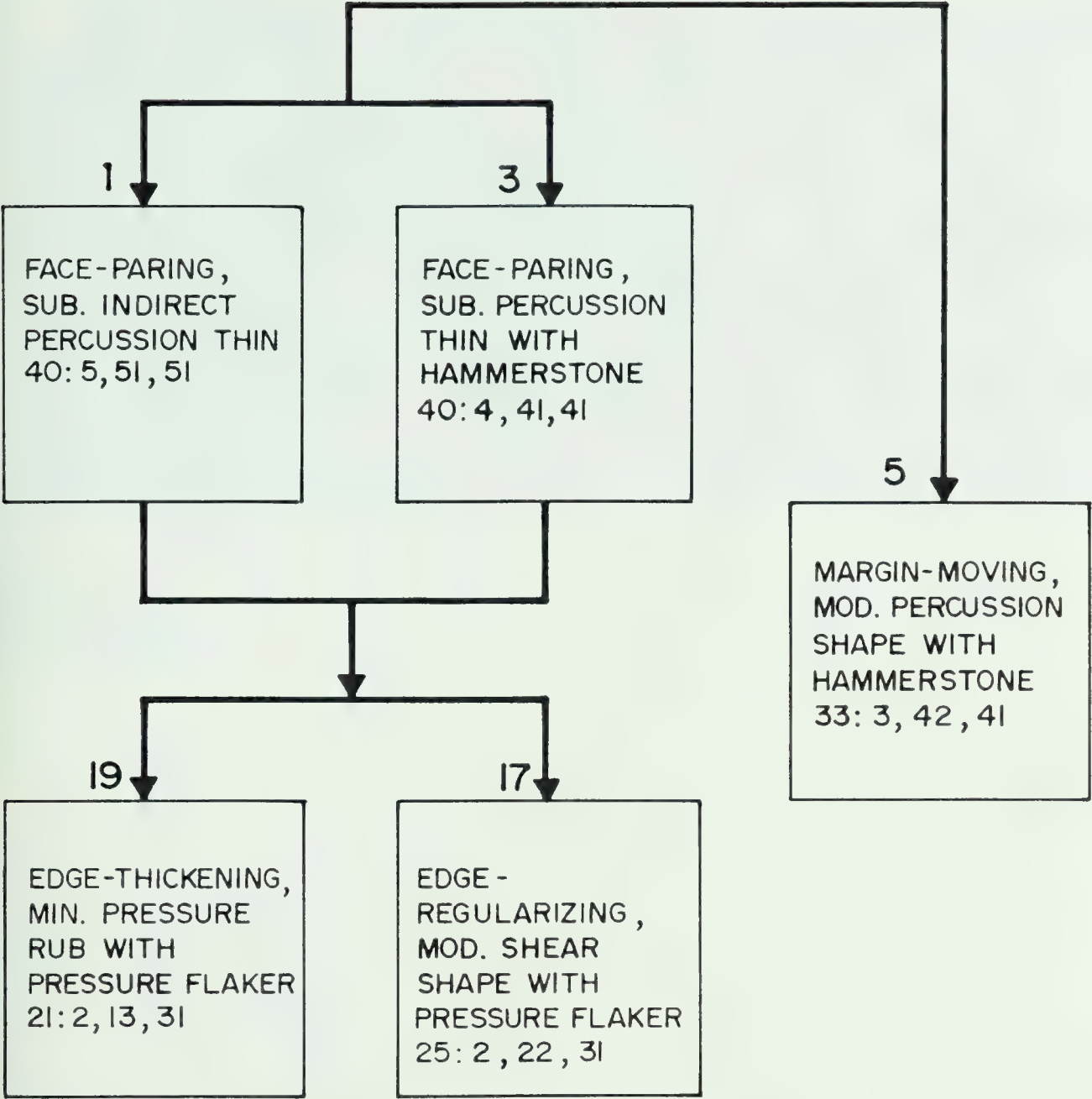
There are no pressure thin or shape units on this specimen.

### 3.3 Function of Edge Units (minimal to very minimal size scars on specimen)

Two edge units are identified:

- (a) Minimum Pressure Rub with P.F.: This behavior unit was used to remove a thin edge and thicken/strengthen it prior to removal of further thinning/shaping flakes. A pressure rub removes a relatively small amount of material from the edge. Production Unit Code is 21:2, 13, 31. (Edge unit # 1).
- (b) Moderate/Substantial Shear Shape with Pressure Flaker: This behavior unit was used to straighten, center, reduce and strengthen the edge by means of a shearing movement around the edge from one face to another. Production Unit 23/25:2, 22, 31. Although edge unit # 2 could not be identified due to the scores being too close together it is possible that it is either a minimum shear or a minimum pressure rub as these units are represented elsewhere on the specimen.





(b) Reconstructing Sequencing of Production Units: C01085

3.4 Flow Diagram of Production Units (above)





### 3.5 Description and Discussion of Technological Grammar Found on Artifact

This prehistoric biface rough out or preform was manufactured from a large flake of which only a small remnant area remains (see scar 023). This flake core was thinned utilizing substantial percussion thinning with a billet. Shaping of the convex base area was accomplished by moderate and substantial hammerstone shaping flakes which moved a portion of the margin on both faces at the same time, therefore substantially changing the outline form in the base area to produce the desired convex shape. As the artifact was by no means finished and because of the need to remove further thinning and shaping flakes, the same edges (edge units 2 & 3) were straightened, centered, reduced and strengthened by means of a moderate to substantial shear shape with the tip of a pressure flaker. Another edge (edge unit 1) perhaps did not require as much edge work and here the pressure flaker was used to rub the edge of the artifact to blunt and strengthen it. At this point the biface preform is complete and ready for final thinning and shaping.





DeHa-8 — CO 1085

## OBVERSE FACE

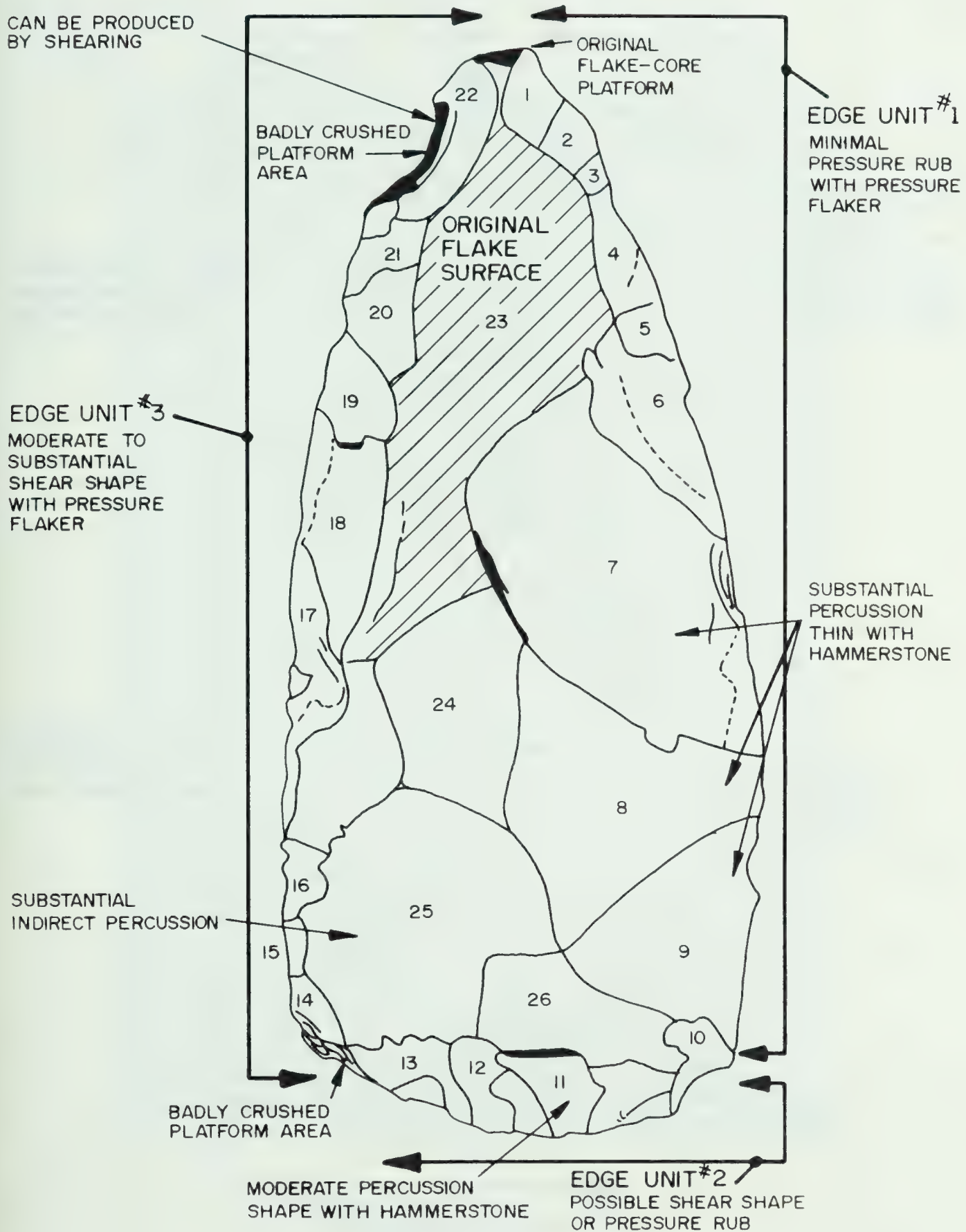


FIGURE 36



DeHa-8 ————— CO 1085

REVERSE FACE

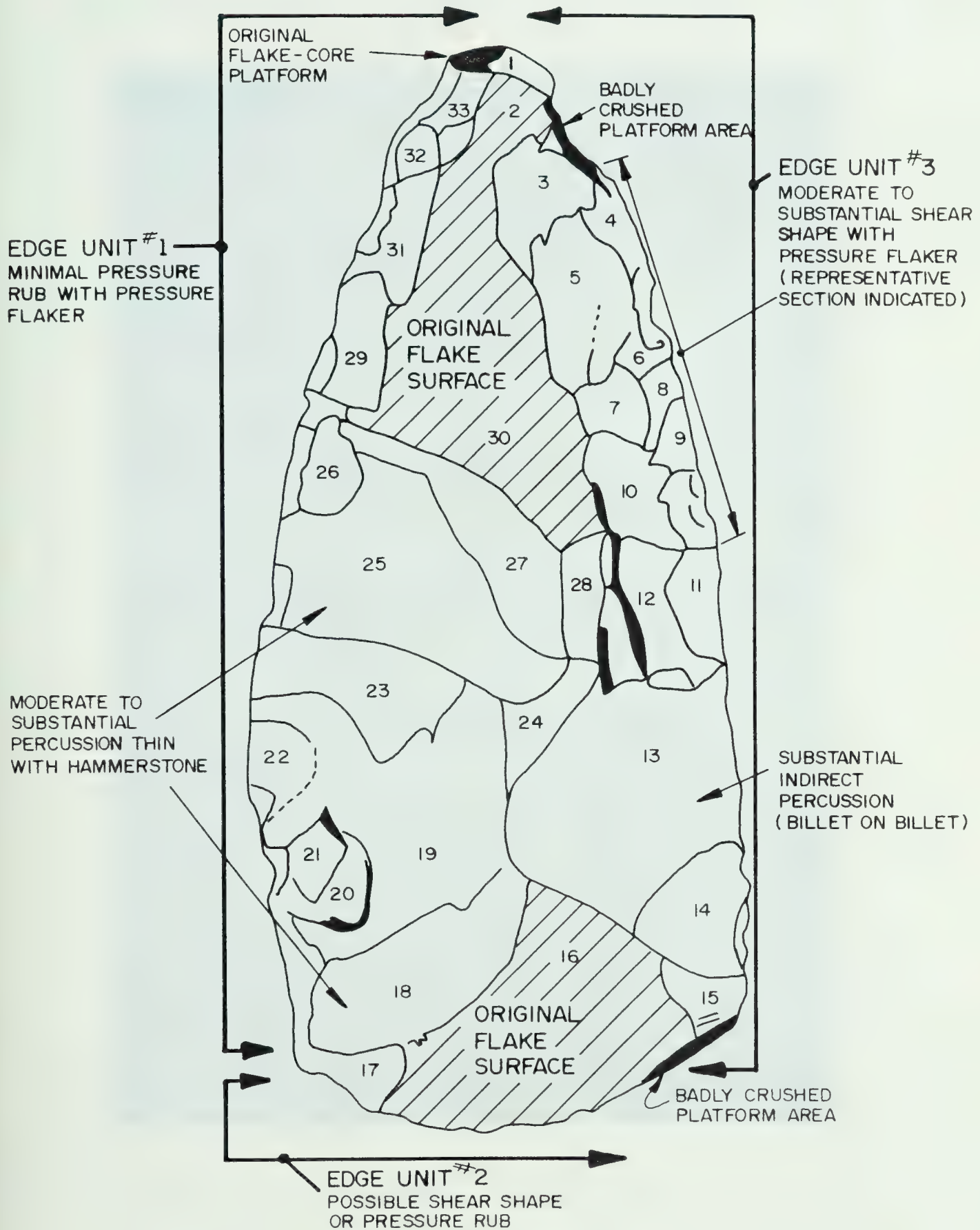


FIGURE 37



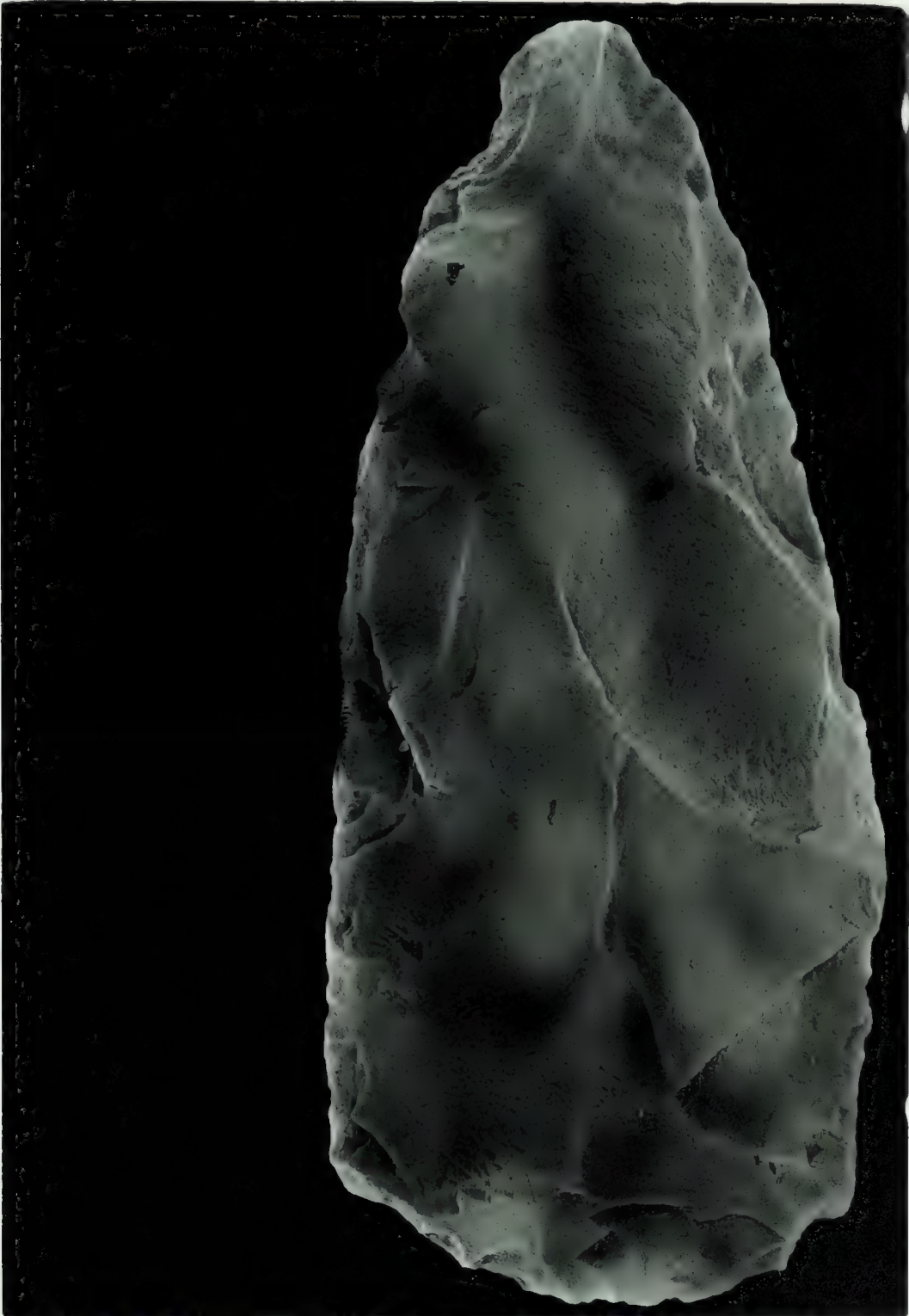


Plate 46: Prehistoric Artifact C01085, Obverse Face.





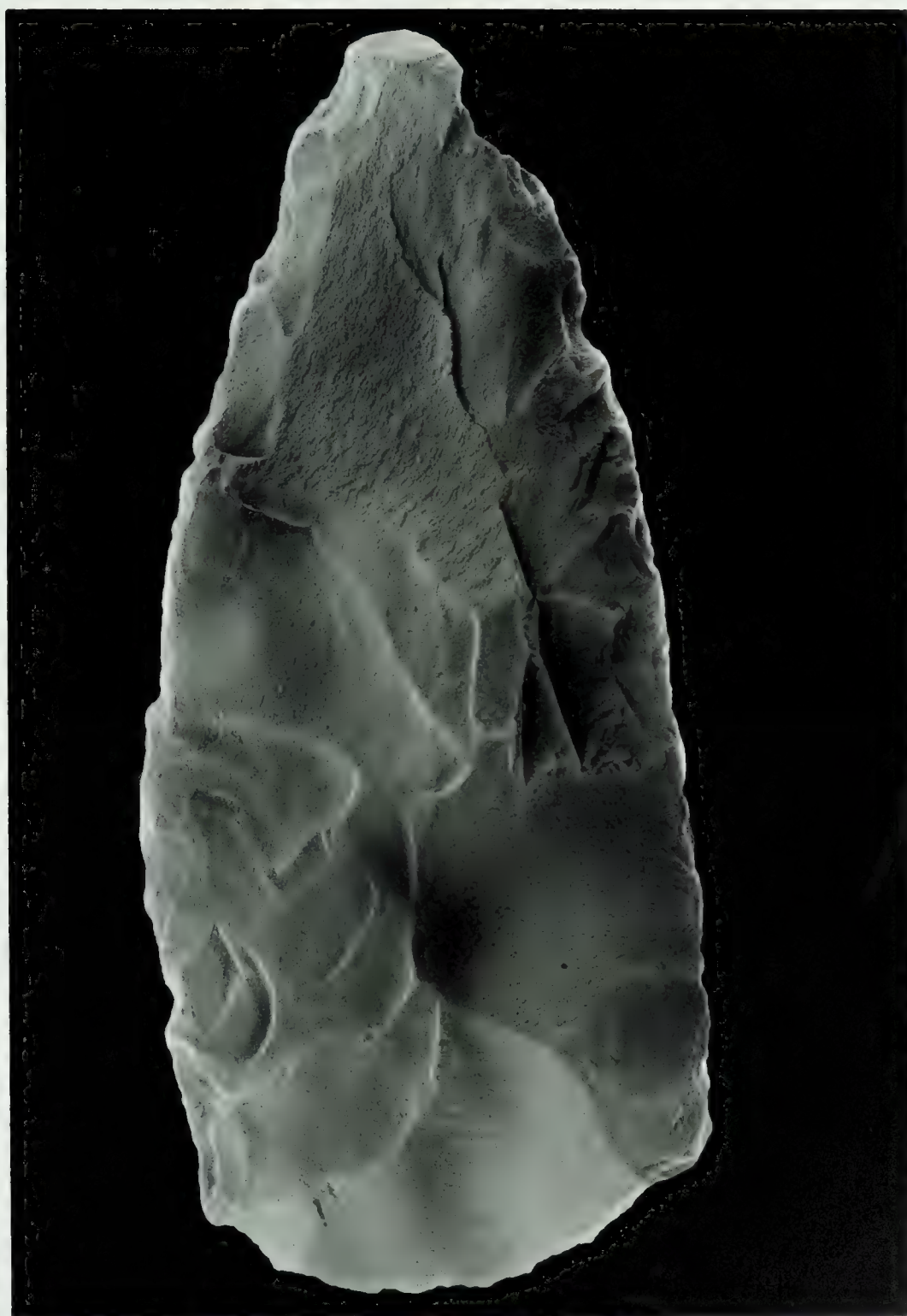


Plate 47: Prehistoric Artifact C01085, Reverse Face.



Table 61: Form for Coding and Interpreting  
Prehistoric Artifacts

1.0 Prehistoric Artifact Identification

1.1 Artifact Face: Obverse and Reverse

1.2 Prehistoric Specimen Provenience: DeHa-8

1.3 Specimen Catalogue #: C01079

1.4 Photographic Plate Identification: Roll 4, A5, #34

1.5 Standard Artifact Description:

1.6 Raw Material: Welded Tuff

1.7 Shape/Artifact Class: Biface

1.8 Flaking (Bifacial/Unifacial): Bifacial

1.9 Metric Size: length - 10.2 cm  
width - 4.2 cm  
thickness - 1.1 cm

1.10 Form/Morphology Description:

This is a well shaped lanceolate biface with thinning and retouch flakes present on both the obverse and reverse faces. It is a broad specimen (4.2 cm) and has a broad but slightly convex base exhibiting several thinning scars on the obverse face. No original cortex or core surfaces remain on this artifact.



## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C01079	Main Flake Scar # 06	Edge Treatment on Same Scar	Notes
1.1 Scar Size	moderate to sub	(1) very minimal to minimal (1)	1. Covers Edge Unit 1 (edge treatment for all scars, all faces).
2.1 Edge Sharpness		sharp	
2.2 Margin Damage		light	
2.3 Microflakes		heavy	
2.4 Proximal Edge Morphology		straight with some convex projections	
3.1 Negative Bulb of Force	indistinct		
3.2 Bulb to Scar Transition Angle	gradual		
3.3 Flake Thickness	thin		
4.1 Presence or Absence of Ribs	0		
4.2 Distinctiveness of Ribs	n/a		
4.3 Rib Spacing And Distribution	n/a		
4.4 Tearing	light		
5.1 Scar Shape at Distal Edge	rounded	straight and rounded	
5.2 Scar Termination at Distal Edge	feather	step and feather	





## 2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar 06, Main Scar, C01079

Prehistoric C01079 Scar 06		AB7-10 Sub. Perc. Thin Billet	AB12-19 Sub. Perc. Shape Billet	AB5-9(b) Mod. Perc. Thin Billet	AB16-7(a) Mod./Sub. Perc. Thin Hammerstone	AB15-18(a) Mod. Perc. Shape Billet
1.1	mod. to sub.	+ 1	+ 1	+ 1	+ 1	+ 1
2.1						
2.2						
2.3						
2.4						
3.1	indistinct	+ 75 - 25	+ 1	+ 80 - 20	+ 1	+ 85.72 - 14.28
3.2	gradual	+ 75 - 25	+ 1	+ 80 - 20	+ 1	+ 1
3.3	thin	+ 50 - 50	+ 75 - 25	+ 80 - 20	+ 80 - 20	+ 85.72 - 14.28
4.1	0	+ 50 - 50	+ 75 - 25	+ 80 - 20	+ 20 - 80	+ 85.72 - 14.28
4.2	n/a	n/a	n/a	n/a	n/a	n/a
4.3	n/a	n/a	n/a	n/a	n/a	n/a
4.4	light	+ 25 - 75	- 1	+ 20 - 80	+ 40 - 60	+ 14.28 - 85.72





5.1	rounded	+ 50 - 50	+ 25 - 75	+ 40 - 60	+ 40 - 60	+ 42.9 - 57.1
5.2	feather	+ 25 - 75	+ 1	+ 50 - 50	+ 40 - 60	+ 71.4 - 28.6
Total	+	+ 4.5	+ 5.75	+ 5.3	+ 5.2	+ 5.86
	-	- 3.5	- 2.25	- 2.7	- 2.8	- 2.14
%	+	+ 56	+ 72	+ 66.25	+ 65	+ 73
	-	- 44	- 28	- 33.75	- 35	- 23
Score		+ 12	+ 44	+ 32.50	+ 30	+ 50

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Possible + 50 Mod. Perc. Shape Billet  
(Hammerstone shape units coded lower)



2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar, C01079 Edge Unit 1 - all scars, all faces

Prehistoric C01079 Edge Unit 1	AB2-2(c) Min. Plat. Isol. Using P.F.	AB2-2 Min. Press. Rub with P.F.	AB10-1(b) Min. Rub Buffet Billet	AB10-1(a) Min. Rub Buffet Hammer	AB6-13(a) Min. Shear Shape P.F.
1.1 very minimal to minimal	+ 1	+ 1	+ 1	+ 1	+ 1
2.1 sharp	+ 1	+ 1	+ 15 - 85	- 1	+ 33.3 - 66.7
2.2 light	- 1	- 1	+ 15 - 85	- 1	+ 16.7 - 83.3
2.3 heavy	- 1	+ 1	- 1	- 1	+ 66.7 - 33.3
2.4 straight with convex projections	- 1	+ 84 - 16	+ 1	+ 1	+ 1
3.1					
3.2					
3.3					
4.1					
4.2					
4.3					
4.4					



5.1	straight and rounded	+ 86 - 14	+ 1	- 1	+ 75 - 25	+ 50 - 50
5.2	step and feather	+ 1	+ 1	+ 1	+ 1	+ 50 - 50
Total						
+		+ 3.86	+ 5.84	+ 3.30	+ 3.75	+ 4.17
-		- 3.14	- 1.16	- 3.70	- 3.25	+ 4.17
%						
+		+ 55	+ 83	+ 47	+ 54	+ 60
-		- 45	- 17	- 53	- 46	- 40
Score						
		+ 10	+ 66	- 6	+ 8	+ 20

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Possible + 66 - Min. Press. Rub with P.F.





## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C01079	Main Flake Scar # 09	Edge Treatment on Same Scar	Notes
1.1 Scar Size	very substantial	(1)	1. See scar 06 for edge treatment
2.1 Edge Sharpness			
2.2 Margin Damage			
2.3 Microflakes			
2.4 Proximal Edge Morphology			
3.1 Negative Bulb of Force	indistinct		
3.2 Bulb to Scar Transition Angle	gradual		
3.3 Flake Thickness	thin		
4.1 Presence or Absence of Ribs	0		
4.2 Distinctiveness of Ribs	n/a		
4.3 Rib Spacing And Distribution	n/a		
4.4 Tearing	light		
5.1 Scar Shape at Distal Edge	rounded		
5.2 Scar Termination at Distal Edge	feather		



2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar 09, C01079

	Prehistoric C01079 Scar 09 *	AB7-10 Sub. Perc. Thin Billet	AB5-9(b) Mod. Perc. Thin Billet	AB16-7(a) Mod./Sub. Perc. Thin Hammerstone	AB11-11 Sub. Indirect Percussion
1.1	substantial	+ 1	+ 1	+ 1	+ 1
2.1					
2.2					
2.3					
2.4					
3.1	indistinct	+ 75 - 25	+ 80 - 20	+ 1	+ 66.7 - 33.3
3.2	gradual	+ 75 - 25	+ 80 - 20	+ 1	+ 1
3.3	thin	+ 50 - 50	+ 80 - 20	+ 80 - 20	+ 1
4.1	0	+ 50 - 50	+ 80 - 20	+ 20 - 80	+ 66.7 - 33.3
4.2	n/a	n/a	n/a	n/a	n/a
4.3	n/a	n/a	n/a	n/a	n/a
4.4	light	+ 25 - 75	+ 20 - 80	+ 40 - 60	+ 33.3 - 66.7



5.1	rounded	+ 50 - 50	+ 40 - 60	+ 40 - 60	+ 33.3 - 66.7
5.2	feather	+ 25 - 75	+ 50 - 50	+ 40 - 60	+ 1
	+	+ 4.5	+ 5.3	+ 5.2	+ 6
Total	-	- 3.5	- 2.7	- 2.8	- 2
	+	+ 56	+ 66.25	+ 65	+ 75
%	-	- 44	- 33.75	- 35	- 25
Score		+ 12	+ 32.50	+ 30	+ 50

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Possible + 50 - Sub. Indirect Percussion



## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C01079	Main Flake Scar # 019	Edge Treatment on Same Scar	Notes
1.1 Scar Size	very substantial	(1)	1. see scar 06 for edge treatment
2.1 Edge Sharpness			2. Some other scars that have ribs are the same as this one.
2.2 Margin Damage			
2.3 Microflakes			
2.4 Proximal Edge Morphology			
3.1 Negative Bulb of Force	distinct		
3.2 Bulb to Scar Transition Angle	steep		
3.3 Flake Thickness	thin		
4.1 Presence or Absence of Ribs	present		
4.2 Distinctiveness of Ribs	indistinct		
4.3 Rib Spacing And Distribution	rel. far apart on distal 1/2		
4.4 Tearing	0		
5.1 Scar Shape at Distal Edge	rounded partly straight		
5.2 Scar Termination at Distal Edge	feather and step		





2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar 019, C01079

	Prehistoric C01079 Scar 019	AB16-7(a) Mod./Sub. Perc. Thin Hammerstone	AB7-10 Sub. Perc. Thin Billet	AB11-11 Sub. Indirect Perc. Billet
1.1	very substantial	+ 1	+ 1	+ 1
2.1				
2.2				
2.3				
2.4				
3.1	distinct	- 1	+ 25 - 75	+ 33.3 - 66.7
3.2	steep	- 1	+ 25 - 75	- 1
3.3	thin	+ 1	+ 50 - 50	+ 1
4.1	present	+ 1	+ 50 - 50	+ 33.3 - 66.7
4.2	indistinct	+ 1	+ 1	+ 1
4.3	rel. far apart on distal 1/2	- 1	+ 1	+ 1
4.4	0	+ 60 - 40	+ 75 - 25	+ 66.7 - 33.3



5.1	rounded	+ 40 - 60	+ 50 - 50	+ 33.3 - 66.7
5.2	pred. step some feather	+ 1	+ 1	+ 20 - 80
	+	+ 6.0	+ 6.75	+ 5.87
Total	-	- 4.0	- 3.25	- 4.13
	+	+ 60	+ 68	+ 59
%	-	- 40	- 32	- 41
Score		+ 20	+ 36	+ 18

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Possible + 36 Sub. Perc. Thin Billet



## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C01079	Main Flake Scar # R7	Edge Treatment on Same Scar	Notes
1.1 Scar Size	substantial	(1)	1. See scar 06 for edge treatment.
2.1 Edge Sharpness			2. Not possible to assess whether they are far apart or close together.
2.2 Margin Damage			
2.3 Microflakes			
2.4 Proximal Edge Morphology			
3.1 Negative Bulb of Force	indistinct		
3.2 Bulb to Scar Transition Angle	gradual		
3.3 Flake Thickness	thin		
4.1 Presence or Absence of Ribs	present		
4.2 Distinctiveness of Ribs	indistinct		
4.3 Rib Spacing And Distribution	evenly dist. (2)		
4.4 Tearing	0		
5.1 Scar Shape at Distal Edge	straight		
5.2 Scar Termination at Distal Edge	feather step		





2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar R7, C01079

Prehistoric C01079 Scar R7		AB7-10 Sub. Perc. Thin Billet	AB8-6 Sub. Press. Thin P.F.	AB11-11 Sub. Indirect Percussion	AB16-7(a) Sub./Mod. Perc. Thin Hammerstone
1.1	substantial	+ 1	+ 1	+ 1	+ 1
2.1					
2.2					
2.3					
2.4					
3.1	indistinct	+ 75 - 25	+ 1	+ 66.7 - 33.3	+ 1
3.2	gradual	+ 75 - 25	+ 1	+ 1	+ 1
3.3	thin	+ 50 - 50	+ 1	+ 1	+ 80 - 20
4.1	present	+ 50 - 50	+ 50 - 50	+ 33.3 - 66.7	+ 80 - 20
4.2	indistinct	+ 1	+ 1	+ 1	+ 1
4.3	evenly dist.	- 1	+ 1	+ 1	+ 1
4.4	0	+ 75 - 25	+ 75 - 25	+ 66.7 - 33.3	+ 60 - 40



5.1	straight	- 1	+ 25 - 75	- 1	+ 60 - 40
5.2	feather step	+ 1	+ 1	+ 50 - 50	+ 1
Total					
+		+ 6.25	+ 8.5	+ 7.17	+ 8.8
-		- 3.75	- 1.5	- 2.83	- 1.2
%					
+		+ 63	+ 85	+ 72	+ 88
-		- 37	- 15	- 28	- 12
Score					
		+ 26	+ 70	+ 44	+ 76

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Highly Probable + 70 - Sub. Perc. Thin Pressure Flaker

This scar is either pressure flaking or hammerstone, two behavior units which are similar in morphology. Because there is other pressure work on the artifact (scar R18 and tip area), this scar has been identified as pressure.



## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C01079	Main Flake Scar # R8	Edge Treatment on Same Scar	Notes
1.1 Scar Size	very substantial	(1)	1. See scar 06 for edge treatment.
2.1 Edge Sharpness			2. Most of the bulb of force may be missing.
2.2 Margin Damage			
2.3 Microflakes			
2.4 Proximal Edge Morphology			
3.1 Negative Bulb of Force	indistinct (2)		
3.2 Bulb to Scar Transition Angle	gradual		
3.3 Flake Thickness	thin		
4.1 Presence or Absence of Ribs	present		
4.2 Distinctiveness of Ribs	indistinct		
4.3 Rib Spacing And Distribution	rel. far apart on distal 1/2		
4.4 Tearing	light		
5.1 Scar Shape at Distal Edge	rounded and irregular		
5.2 Scar Termination at Distal Edge	step feather		



2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar R8, C01079

Prehistoric C01079 Scar R8	AB16-7(a) Mod./Sub. Perc. Thin Hammerstone	AB5-9(b) Mod. Perc. Thin Billet	AB7-10 Sub. Perc. Thin Billet	AB11-11 Sub. Ind. Perc.
1.1 very sub.	+ 1	+ 1	+ 1	+ 1
2.1				
2.2				
2.3				
2.4				
3.1 indistinct	+ 1	+ 80 - 20	+ 75 - 25	+ 66.7 - 33.3
3.2 gradual	+ 1	+ 80 - 20	+ 75 - 25	+ 1
3.3 thin	+ 80 - 20	+ 80 - 20	+ 50 - 50	+ 1
4.1 present	+ 80 - 20	+ 20 - 80	+ 50 - 50	+ 33.3 - 66.7
4.2 indistinct	+ 1	+ 1	+ 1	+ 1
4.3 far apart on distal 1/2	- 1	+ 1	+ 1	+ 1
4.4 light	+ 40 - 60	+ 20 - 80	+ 25 - 75	+ 33.3 - 66.7





5.1	rounded and irregular	+ 40 - 60	+ 40 - 60	+ 1	+ 50 - 50
5.2	step feather	+ 1	+ 1	+ 1	+ 50 - 50
Total					
+		+ 7.4	+ 7.2	+ 7.75	+ 7.32
-		- 2.6	- 2.8	- 2.25	- 2.68
%					
+		+ 74	+ 72	+ 78	+ 73
-		- 26	- 28	- 22	- 27
Score					
		+ 48	+ 44	+ 56	+ 46

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:  
Possible + 56 Sub. Perc. Thin Billet



## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C01079	Main Flake Scar # R18	Edge Treatment on Same Scar	Notes
1.1 Scar Size	moderate	(1)	1. See scar 06 for edge treatment.
2.1 Edge Sharpness			
2.2 Margin Damage			
2.3 Microflakes			
2.4 Proximal Edge Morphology			
3.1 Negative Bulb of Force	indistinct		
3.2 Bulb to Scar Transition Angle	gradual		
3.3 Flake Thickness	thin		
4.1 Presence or Absence of Ribs	present		
4.2 Distinctiveness of Ribs	indistinct		
4.3 Rib Spacing And Distribution	rel. close together & evenly dist.		
4.4 Tearing	light		
5.1 Scar Shape at Distal Edge	straight		
5.2 Scar Termination at Distal Edge	feather		



2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar R18, C01079

	Prehistoric C01079 R17	AB9-5		AB15-18(a)		AB8-6		AB16-17(a)		AB3-17	
		Mod. Perc.	Thin Billet	Mod. Perc.	Shape Billet	Sub. Press.	Thin with P.F.	Mod./Sub. Perc.	Thin Hammerstone	Mod. Perc.	Shape Hammer.
1.1	moderate	+ 1		+ 1		+ 1		+ 1		+ 1	
2.1											
2.2											
2.3											
2.4											
3.1	indistinct	+ 80 - 20		+ 85.72 - 14.28		+ 1		+ 1		+ 1	
3.2	gradual	+ 80 - 20		+ 1		+ 1		+ 1		+ 1	
3.3	thin	+ 80 - 20		+ 85.72 - 14.28		+ 1		+ 80 - 20		+ 1	
4.1	present	+ 20 - 80		+ 14.28 - 85.72		+ 50 - 50		+ 80 - 20		+ 33.3 - 66.7	
4.2	indistinct	+ 1		+ 1		+ 1		+ 1		+ 1	
4.3	rel. close together & evenly dist.	- 1		- 1		+ 1		- 1		- 1	
4.4	light	+ 20 - 80		+ 14.28 - 85.72		+ 25 - 75		+ 40 - 60		+ 33.3 - 66.7	





5.1	straight	+ 60 - 40	+ 57.1 - 42.9	+ 25 - 75	+ 60 - 40	+ 1
5.2	feather	+ 25 - 75	+ 71.4 - 28.6	+ 75 - 25	+ 40 - 60	+ 1
	+	+ 5.65	+ 6.26	+ 8.25	+ 7.0	+ 7.67
Total	-	- 4.35	- 3.74	- 1.75	- 3.0	- 2.33
	+	+ 57	+ 63	+ 83	+ 70	+ 77
%	-	- 43	- 37	- 17	- 30	- 23
Score		+ 14	+ 26	+ 66	+ 40	+ 54

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Possible + 66 - Sub. Pressure Thin with P.F.



2.4 Summary of Behavior Units (Morpho-Units) Identified on Artifact C01079

Main Scar #	Edge Unit Scar #	Rating on Scoring Scale	Final +/- Score	Behavior Unit	Experimental Control Specimen
06		possible	+ 50	Mod. Perc. Shape Billet	AB15-18(a)
	Edge Unit # 1	possible	+ 66	Min. Pressure Rub with P.F. (no other scores in poss. range)	
09		possible	+ 50	Sub. Indirect Percussion	AB11-11
019		possible	+ 36	Sub. Perc. Thin Billet	AB7-10
R7		highly probable	+ 70	Sub. Pressure Thin with P.F.	AB8-6
R8		possible	+ 56	Sub. Perc. Thin Billet	AB7-10
R17		possible	+ 66	Sub. Pressure thin with P.F.	AB8-6
top & base		n/a	n/a	Minimum pressure shape with P.F.	AB13-15



### 3.0 Interpretation of Behavior (Technological) Units

(a) Transforming Behavior Units into Production Units: C01079

#### 3.1 Function of Percussion Thinning/Shaping Units (moderate to very substantial size scars on specimen)

- (a) Substantial Indirect Percussion Thinning: Identified on scar 09, this behavior unit is used to remove very large, thin, face paring flakes used to thin the specimen. Production Unit Code is 40:5, 51, 51. Indirect percussion involves placing the edge of a billet on a platform and then hitting it with another billet (billet on billet).
- (b) Moderate/Substantial Percussion Thin with Billet: Identified on scars 019 and R8, this unit was used for the majority of face paring or thinning flakes on the artifact. Production Unit Code is 40:4, 41, 51.
- (c) Moderate Percussion Shape with Billet: This was the method used to move in the margins and shape the artifact after thinning. Production Unit 33:3, 42, 51.

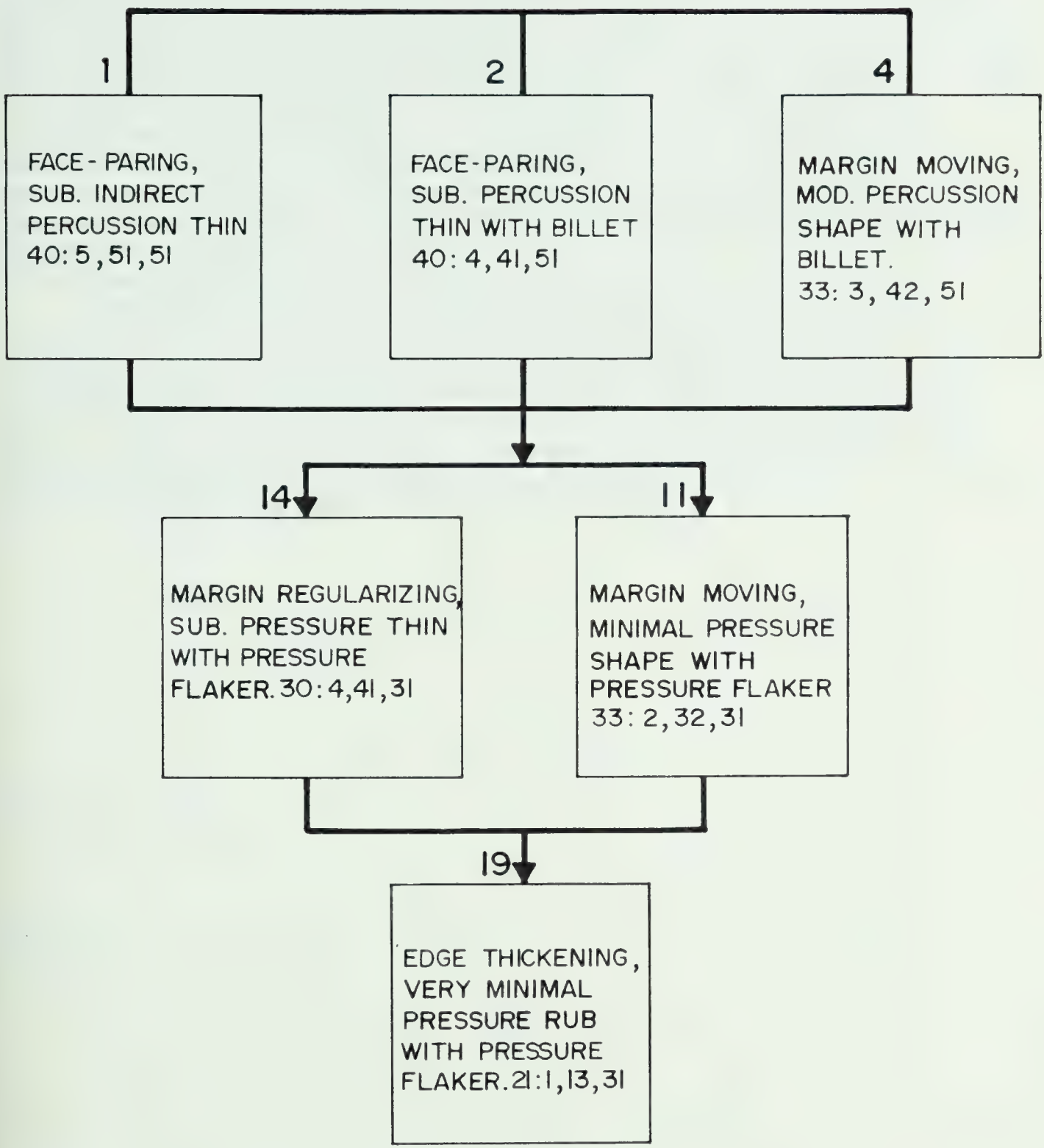
#### 3.2 Function of Pressure Thinning/Shaping Units (minimal to substantial size scars on specimen)

- (a) Substantial Pressure Thin with P.F.: Identified from scars R7 and R17, it was used to remove interflake scar ridges and at the same time, face paring and thinning. Scar R18 is a good example. Production Unit Code is 30:4, 41, 31.
- (b) Min./Mod. pressure Shape with P.F.: These units are present on the tip and especially the base of the artifact and was used to shape the base and create a bifacial edge angle. Production Code is 31/33:2/3, 32, 31.

#### 3.3 Function of Edge Units (minimal to very minimal size scars on specimen)

- (a) Only one edge unit (# 1) is identified on this specimen comprising a minimum pressure rub with the tip of a pressure flaker. This behavior unit executed by rubbing across the artifact edge with the tip of a pressure flaker serves to remove on overly thin edge, thereby thickenin and also straightening it. A relatively small amount of material, in the form of very minimal flakes, was removed and the unit leaves distinct convex projections (04%) and some U-shaped notches from the pressure work (16%). See reference experiment AB2-2(b) for details. Production Unit Code is 21:1, 13, 31.





(b) Reconstructing Sequencing of Production Units: C01079

3.4 Flow Diagram of Production Units (above)





### 3.5 Description and Discussion of Technological Grammar Found on Artifact

Prehistoric artifact C01079 is a well made symmetrical biface in a finished form. Not surprisingly, there is little evidence left of the original shaping flakes, these having been obscured by the extensive thinning found in the finishing stages. Some of the large flakes (i.e., 09) may have been removed by substantial indirect percussion thinning but the majority of the work on the specimen (4 scars identified: 019, R-7, 8, 17) was by substantial billet face paring (or thinning) percussion flakes. Following the percussion thinning which leaves sharp, thin edges and shallow curved notches on the edges, some percussion shaping or margin moving was undertaken to shape the outline form of the artifact. This was followed by pressure margin regularizing to remove interscar flake ridges. As well, pressure shape was used to shape the tip and base.

Following the pressure flaking and billet shaping, a pressure flaker was used to strengthen the overly thin edge and, to some extent, straighten the edge by levelling out the flat curved notches. However, while this does straighten the edge it also leaves a rough edge with many small convex projections and the occasional U-shaped notch. For some reason which is not readily apparent from a technological aspect (which may suggest post-manufacturing breakage), the artifact is broken bi-laterally and has been restored for analysis.



DeHa -8 ————— CO 1079

OBVERSE FACE

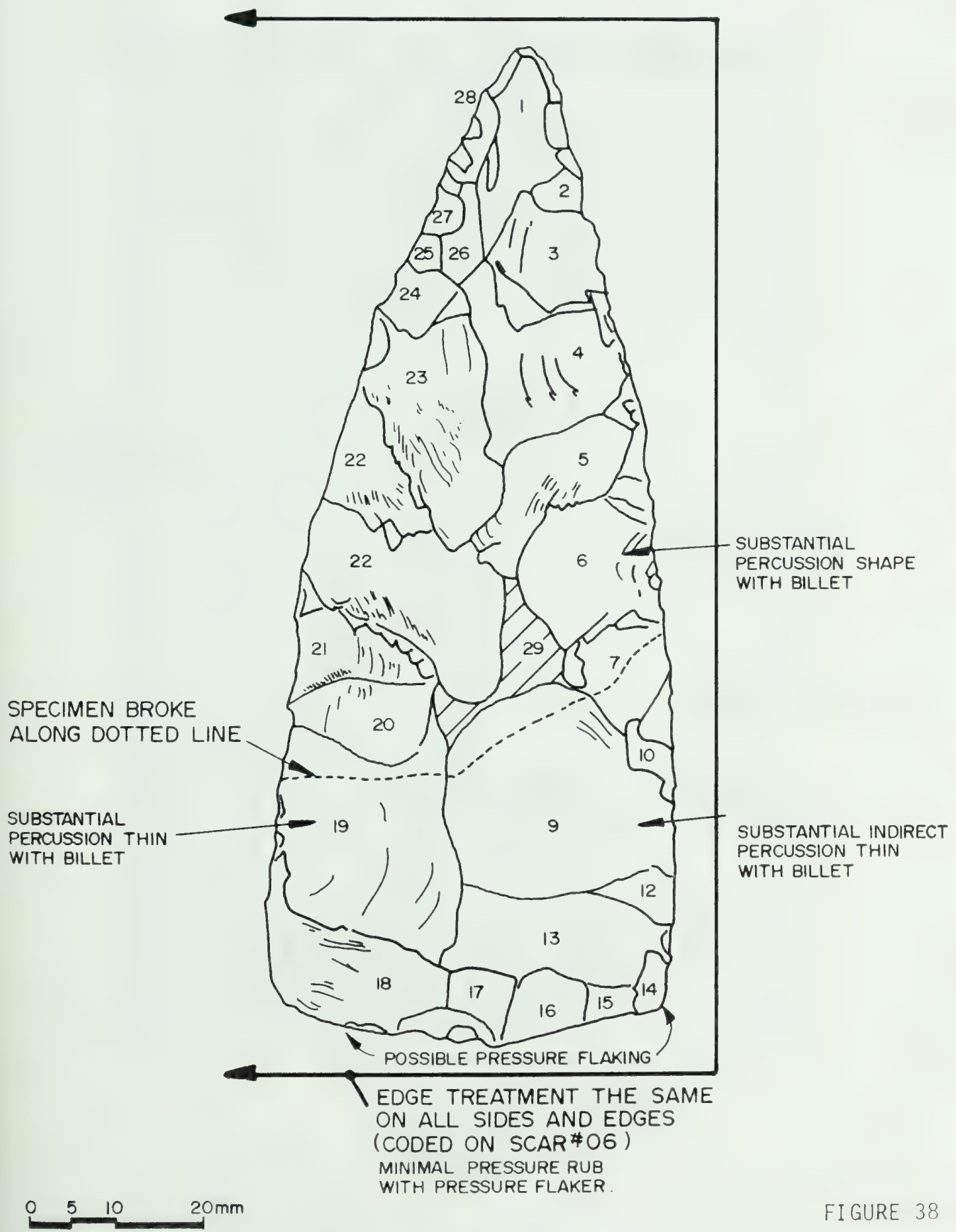


FIGURE 38



DeHa-8 ————— CO 1079

REVERSE FACE

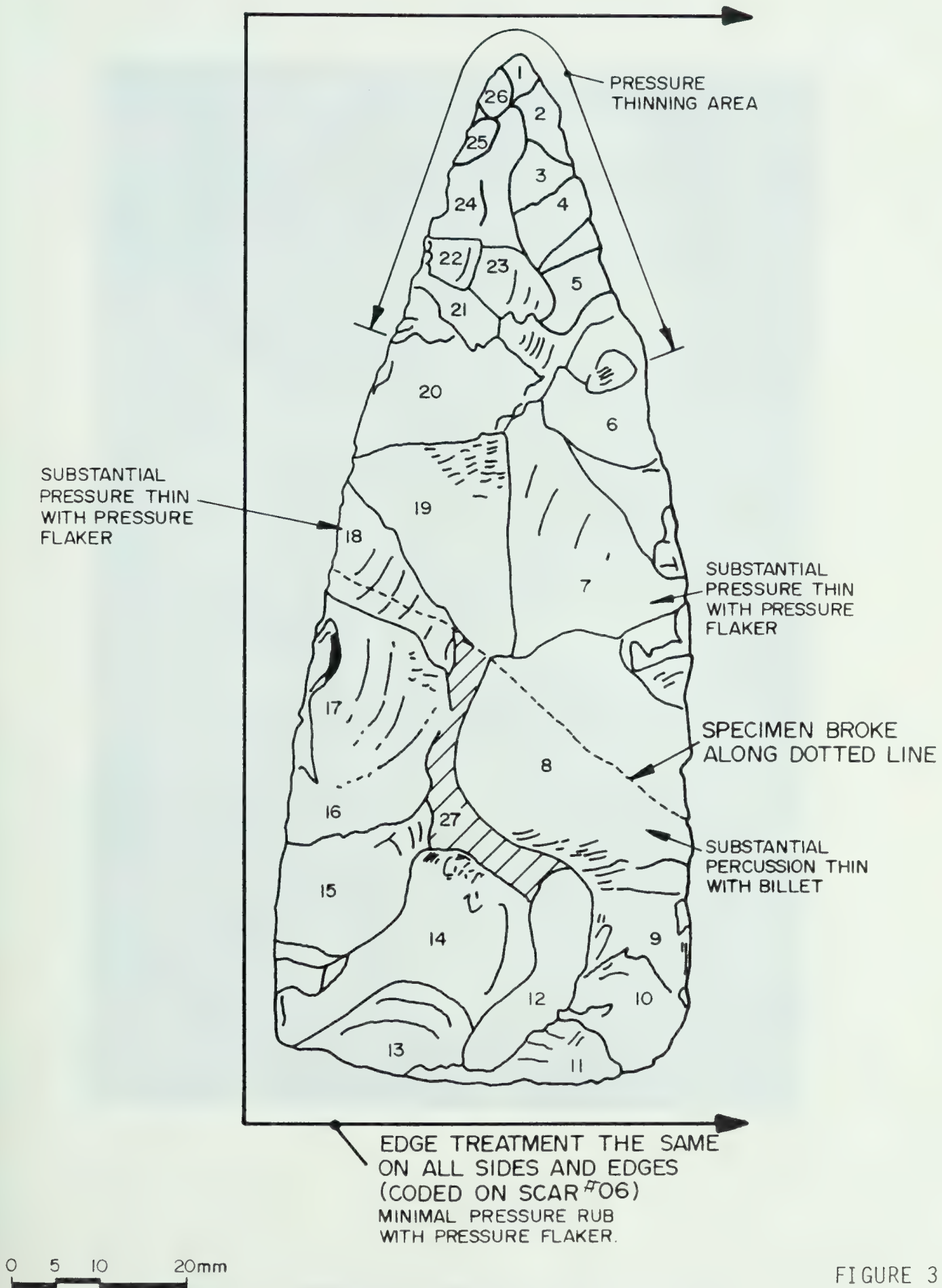


FIGURE 39





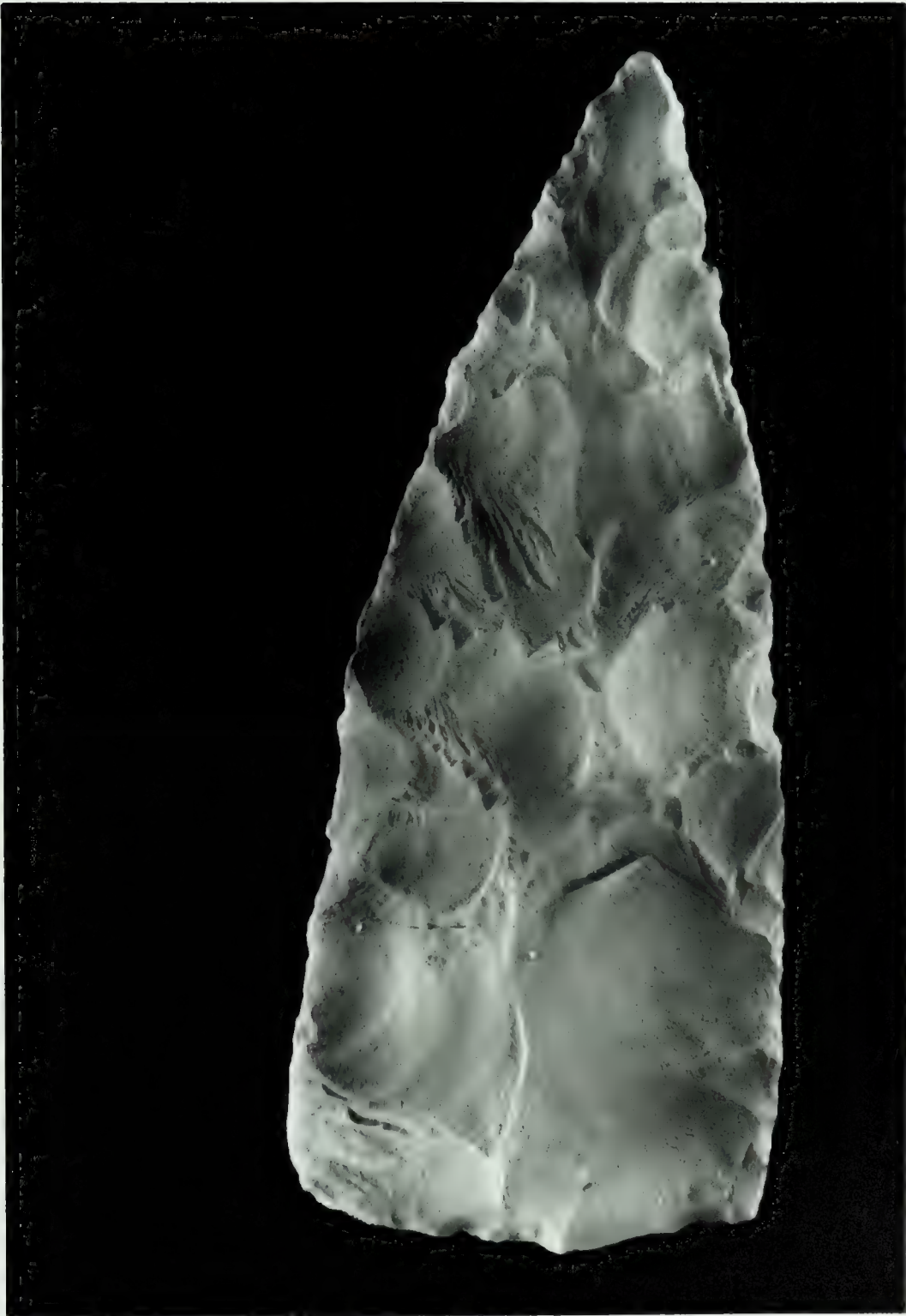


Plate 48: Prehistoric Artifact C01079, Obverse Face.



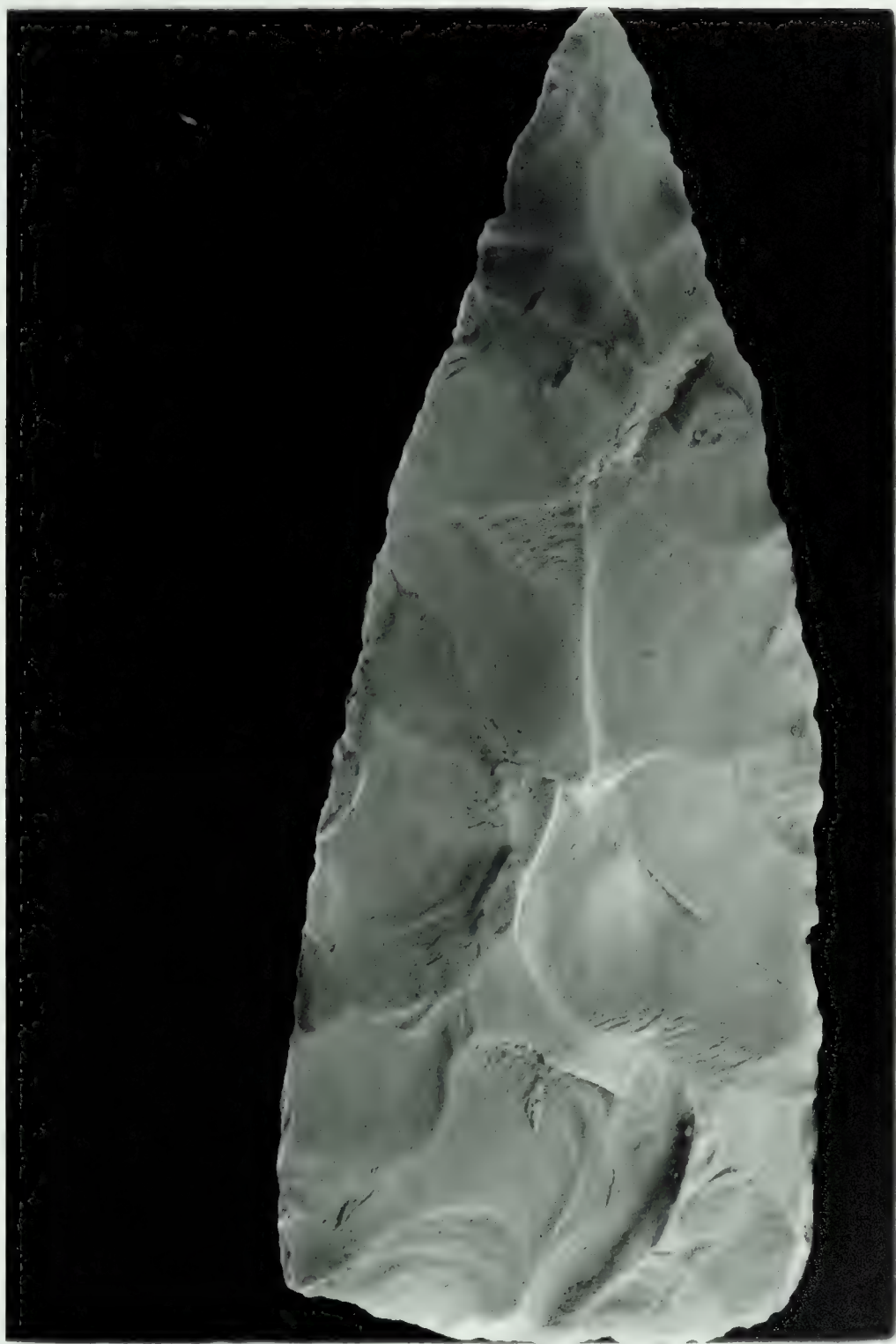


Plate 49: Prehistoric Artifact C01079, Reverse Face.



Table 62: Form for Coding and Interpreting  
Prehistoric Artifacts

1.0 Prehistoric Artifact Identification

1.1 Artifact Face: Obverse and Reverse

1.2 Prehistoric Specimen Provenience: DeHa-8, Jordan Site

1.3 Specimen Catalogue #: C01067

1.4 Photographic Plate Identification: Roll 1, A2, #37  
Roll 1, A1, #31

1.5 Standard Artifact Description:

1.6 Raw Material: Welded Tuff

1.7 Shape/Artifact Class: biface

1.8 Flaking (Bifacial/Unifacial): bifacial

1.9 Metric Size: length - 10.8 cm  
width - 6.6 cm  
thickness - 1.2 cm

1.10 Form/Morphology Description:

This semi-lunate biface has extensive primary percussion flaking on its obverse and reverse surfaces with less retouching on the obverse face. One lateral margin has a steep working face which may have served as a scraping/cutting edge. Distinctive thinning flakes are also visible on the broad straight base of the specimen.





## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C01067	Main Flake Scar # 08	Edge Treatment on Same Scar	Notes
1.1 Scar Size	very substantial	very minimal to minimal (1)	1. Edge Unit 1 Scars 1 to 14 obverse face, scars 12-37 Reverse face (see scar R-14 and R-18).
2.1 Edge Sharpness		intermediate to sharp	
2.2 Margin Damage		light	
2.3 Microflakes		heavy	
2.4 Proximal Edge Morphology		straight	2. Impossible to code due to natural undula- tions in raw material.
3.1 Negative Bulb of Force	indistinct		
3.2 Bulb to Scar Transition Angle	gradual		
3.3 Flake Thickness	thin		
4.1 Presence or Absence of Ribs	0 (2)		
4.2 Distinctiveness of Ribs	n/a		
4.3 Rib Spacing And Distribution	n/a		
4.4 Tearing	0		
5.1 Scar Shape at Distal Edge	irregular	straight/ irregular	
5.2 Scar Termination at Distal Edge	feather	feather and step	





2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar 08, C01067

	Prehistoric C01067 Scar 08	AB16-7(a) Mod./Sub. Perc. Thin Hammerstone	AB7-10 Sub. Perc. Thin Billet	AB11-11 Sub. Indirect Percussion
1.1	very substantial	+ 1	+ 1	+ 1
2.1				
2.2				
2.3				
2.4				
3.1	indistinct	+ 1	+ 75 - 25	+ 66.7 - 33.3
3.2	gradual	+ 1	+ 75 - 25	+ 1
3.3	thin	+ 80 - 20	+ 50 - 50	+ 1
4.1	0	+ 20 - 80	+ 50 - 50	+ 66.7 - 33.3
4.2	n/a	n/a	n/a	n/a
4.3	n/a	n/a	n/a	n/a
4.4	0	+ 60 - 40	+ 75 - 25	+ 66.7 - 33.3



5.1	irregular	- 1	+ 50 - 50	+ 66.7 - 33.3
5.2	feather	+ 1	+ 1	+ 1
	+	+ 5.6	+ 5.75	+ 6.67
Total	-	- 2.4	- 2.25	- 1.33
	+	+ 70	+ 72	+ 83
%	-	- 30	- 28	- 17
Score		+ 40	+ 44	+ 66

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Possible + 60 Sub Indirect Percussion



2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar, C01067, Edge Unit 1 (coded on Scar 08)

Prehistoric C01067 Edge Unit 1	AB2-2(b) Min. Press. Rub/P.F.	AB6-13(a) Min. Shear Shape P.F.	AB6-13(b) Mod./Sub. Shear Shape P.F.	AB10-1(b) Min. Rub Buffet Billet	AB10-1(a) Min. Rub Buffet Hammerstone
1.1 very minimal to minimal	+ 1	+ 1	+ 1	+ 1	+ 1
2.1 intermediate to sharp	+ 50 - 50	+ 1	- 1	+ 50 - 50	+ 1
2.2 light	- 1	+ 16.7 - 83.3	- 1	+ 15 - 85	- 1
2.3 heavy	+ 1	+ 66.7 - 33.3	+ 1	- 1	+ 1
2.4 straight	+ 84 - 16	+ 1	+ 1	+ 1	+ 1
3.1					
3.2					
3.3					
4.1					
4.2					
4.3					
4.4					





5.1	straight/ irregular	+ 50 - 50	+ 1	+ 1	+ 20 - 80	+ 75 - 25
5.2	feather/ step	+ 1	+ 80 - 20	+ 1	+ 1	+ 1
Total	+	+ 4.84	+ 5.64	+ 5	+ 3.85	+ 5.75
	-	- 2.16	- 1.36	- 2	- 3.15	- 1.25
%	+	+ 69	+ 81	+ 71	+ 55	+ 82
	-	- 31	- 19	- 29	- 45	- 18
Score		+ 38	+ 62	+ 42	+ 10	+ 64

### 2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Possible + 64 Min. Rub/Buffer Hammerstone

Possible + 62 Min. Shear Shape P.F.

N.B. After examining the two experimental specimens [AB10-1, AB6-13(a)] representing the above morpho-units, it appears possible that both are represented. Shearing is especially identifiable on scars R17 to R19 and the portion of scar #01 adjacent to scars 03 to 08.



## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C01067	Main Flake Scar # 09	Edge Treatment on Same Scar	Notes
1.1 Scar Size	substantial	(1)	1. Edge Unit 1 (see scar 09 coding and details).  2. Coding difficult due to undulations in raw material
2.1 Edge Sharpness			
2.2 Margin Damage			
2.3 Microflakes			
2.4 Proximal Edge Morphology			
3.1 Negative Bulb of Force	indistinct		
3.2 Bulb to Scar Transition Angle	gradual		
3.3 Flake Thickness	thin		
4.1 Presence or Absence of Ribs	present (2)		
4.2 Distinctiveness of Ribs	indistinct		
4.3 Rib Spacing And Distribution	rel. far apart on distal 1/2		
4.4 Tearing	light		
5.1 Scar Shape at Distal Edge	irregular		
5.2 Scar Termination at Distal Edge	feather		



2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar 09, C01067

	Prehistoric C01067 Scar 09	AB7-10 Sub. Perc. Thin Billet	AB-11 Sub. Indirect Percussion	AB16-7 Mod./Sub. Perc. Thin Hammerstone
1.1	substantial	+ 1	+ 1	+ 1
2.1				
2.2				
2.3				
2.4				
3.1	indistinct	+ 75 - 25	+ 66.7 - 33.3	+ 1
3.2	gradual	+ 75 - 25	+ 1	+ 1
3.3	thin	+ 50 - 50	+ 1	+ 80 - 20
4.1	present	+ 50 - 50	+ 33.3 - 66.7	+ 80 - 20
4.2	indistinct	+ 1	+ 1	+ 1
4.3	rel. far apart on distal 1/2	+ 1	+ 1	- 1
4.4	light	+ 25 - 75	+ 33.3 - 66.7	+ 40 - 60



5.1	irregular	+ 50 - 50	+ 66.7 - 33.3	- 1
5.2	feather	+ 25 - 75	+ 1	+ 40 - 60
	+	+ 6.5	+ 8	+ 6.4
Total	-	- 3.5	- 2	- 3.6
	+	+ 65	+ 80	+ 64
%	-	- 35	- 20	- 36
Score		+ 30	+ 60	+ 28

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Possible + 60 Sub. Indirect Percussion





## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C01067	Main Flake Scar # 016	Edge Treatment on Same Scar	Notes
1.1 Scar Size	very substantial	minimal (1)	1. Edge Unit 2 This unit is primarily on the reverse face with the obverse face being used as a platform area. Scars 15-25 obverse face, composite scar area R1 on reverse face (see coding of scar R1).
2.1 Edge Sharpness		intermediate	
2.2 Margin Damage		heavy	
2.3 Microflakes		heavy	
2.4 Proximal Edge Morphology		straight	
3.1 Negative Bulb of Force	indistinct		2. This edge is very complex and difficult to code as scar definitions are poor and over- lap a great deal.
3.2 Bulb to Scar Transition Angle	gradual		
3.3 Flake Thickness	thin		
4.1 Presence or Absence of Ribs	0 (3)		3. There appear to be natural ridges in the raw material making it difficult to define the nature of any ribs present.
4.2 Distinctiveness of Ribs	n/a		
4.3 Rib Spacing And Distribution	n/a		
4.4 Tearing	light		
5.1 Scar Shape at Distal Edge	irregular	straight/ (2) rounded	
5.2 Scar Termination at Distal Edge	pred. feather	feather	



2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar 016\* C01067

	Prehistoric C01067 Scar 016	AB16-7(a) Mod./Sub. Perc. Thin Hammerstone	AB7-10 Sub. Perc. Thin Billet	AB11-11 Sub. Indirect Percussion
1.1	very substantial	+ 1	+ 1	+ 1
2.1				
2.2				
2.3				
2.4				
3.1	indistinct	+ 1	+ 75 - 25	+ 66.7 - 33.3
3.2	gradual	+ 1	+ 75 - 25	+ 66.7 - 33.3
3.3	thin	+ 80 - 20	+ 50 - 50	+ 1
4.1	0	+ 20 - 80	+ 50 - 50	+ 66.7 - 33.3
4.2	n/a	n/a	n/a	n/a
4.3	n/a	n/a	n/a	n/a
4.4	light	+ 40 - 60	+ 25 - 75	+ 33.3 - 66.7



5.1	irregular	- 1	+ 50 - 50	+ 66.7 - 33.3
5.2	pred. feather	+ 1	+ 1	+ 1
Total				
+		+ 5.4	+ 5.25	+ 6
-		- 2.6	- 2.75	- 2
%				
+		+ 68	+ 66	+ 75
-		- 32	- 34	- 25
Score				
		+ 36	+ 32	+ 50

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Possible + 50 - Sub. Indirect Percussion





2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar C01067 Edge Unit #2 (Coded on Scar 016)

Prehistoric C01067 Edge Unit #2	AB14-16(b) Min. Perc. Shape Hammerstone	AB15-18(b) Min. Perc. Shape Billet	AB6-13(b) Mod./Sub. Shear Shape P.F.	AB10-1(a) Min. Rub Buffet Hammerstone	AB2-2(b) Min. Press. Rub with P.F.
1.1 very min.	+ 1	+ 1	+ 1	+ 1	+ 1
2.1 intermediate to sharp	+ 83.3 - 16.7	+ 50 - 50	+ 50 - 50	+ 1	+ 50 - 50
2.2 heavy	+ 1	+ 1	+ 1	+ 1	+ 1
2.3 heavy	- 1	+ 80 - 20	+ 1	- 1	+ 1
2.4 straight (convex project)	+ 83.3 - 16.6	+ 1	+ 1	+ 1	+ 84 - 16
3.1					
3.2					
3.3					
4.1					
4.2					
4.3					
4.4					



5.1	straight/ rounded	+ 1	+ 1	+ 44 - 56	+ 75 - 25	+ 1
5.2	feather	+ 66.7 - 33.3	+ 80 - 20	+ 77.7 - 22.3	+ 50 - 50	+ 50 - 50
Total						
+		+ 5.3	+ 6.1	+ 5.7	+ 5.25	+ 4.84
-		- 1.7	- .9	- 1.3	- 1.75	- 2.16
+		+ 76	+ 87	+ 81	+ 75	+ 69
-		- 24	- 13	- 19	- 25	- 31
Score		+ 52	+ 74	+ 62	+ 50	+ 28

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Highly Probable + 74 - Min. Perc. Shape Billet, followed by  
Possible + 62 - Mod./Sub. Shear Shape P.F.

N.B. Shear shaping is also present on the other side of the artifact on edge unit # 1.



2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

2.1 Scar Coding Form for Individual Flake Scars

Artifact # C01067		Main Flake Scar # 021	Edge Treatment on Same Scar	Notes
1.1	Scar Size	sub.	(1)	1. Edge Unit 2 (see scar 016 for details).
2.1	Edge Sharpness			
2.2	Margin Damage			
2.3	Microflakes			
2.4	Proximal Edge Morphology			
3.1	Negative Bulb of Force	indistinct		
3.2	Bulb to Scar Transition Angle	gradual		
3.3	Flake Thickness	thin		
4.1	Presence or Absence of Ribs	0		
4.2	Distinctiveness of Ribs	n/a		
4.3	Rib Spacing And Distribution	n/a		
4.4	Tearing	light		
5.1	Scar Shape at Distal Edge	rounded		
5.2	Scar Termination at Distal Edge	feather		



2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar 021\* C01067

Prehistoric C01067 Scar 021	
1.1	substantial
2.1	
2.2	
2.3	
2.4	
3.1	indistinct
3.2	gradual
3.3	thin
4.1	0
4.2	n/a
4.3	n/a
4.4	light





5.1	rounded
5.2	feather
	+
Total	-

\* Same morphology as scar 06 on specimen C01079 - use this sheet for identification.

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Possible + 50 - Sub. Indirect Percussion AB11-11



## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C01067	Main Flake Scar # R1	Edge Treatment on Same Scar	Notes
1.1 Scar Size	n/a see not (1)	minimal (1)	1. Scar # R1 is a composite area of many small scars forming an extensive edge treatment unit which is designated Edge Unit #2. On the obverse face this covered scars 15 to 25 (see scars 016, 025).
2.1 Edge Sharpness		intermediate (2)	
2.2 Margin Damage		heavy	
2.3 Microflakes		heavy	
2.4 Proximal Edge Morphology		straight	2. The unit is unifacial on the reverse face only. There is only some light edge damage on the obverse face, no microflakes or notable flake scars.
3.1 Negative Bulb of Force			
3.2 Bulb to Scar Transition Angle			
3.3 Flake Thickness			
4.1 Presence or Absence of Ribs			
4.2 Distinctiveness of Ribs			
4.3 Rib Spacing And Distribution			
4.4 Tearing			3. There is also a subsequent unit applied to the edge (see coding for scar 016).
5.1 Scar Shape at Distal Edge		straight/ rounded	
5.2 Scar Termination at Distal Edge		feather	



2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar R1 - C01067 (Composite Scar Unit)\*

Prehistoric C01067 Scar Unit R1	AB14-16(b)		AB15-18(b)		AB10-1(a)		AB13-15		AB6-13(a)	
	Min. Perc.	Shape	Min. Perc.	Shape	Min. Rub/Bufet	Hammerstone	Min. Press.	Shape with P.F.	Mod./Sub.	Shear Shape P.F.
1.1	mostly min. some mod.	+ 1	+ 1		+ 1		+ 1		+ 1	
2.1	intermediate	+ 83.3 - 16.7	- 1		+ 1		- 1		- 1	
2.2	heavy	+ 1	+ 1		+ 1		- 1		+ 1	
2.3	heavy	- 1	+ 80 - 20		- 1		- 1		+ 1	
2.4	straight	+ 83.3 - 16.6	+ 1		+ 1		- 1			
3.1										
3.2										
3.3										
4.1										
4.2										
4.3										
4.4										





5.1	straight/ rounded	+ 1	+ 1	+ 75 - 25	+ 1	+ 44 - 56
5.2	feather	+ 66.7 - 33.3	+ 80 - 20	+ 50 - 50	+ 88 - 12	+ 77.7 - 22.3
Total						
+		+ 5.3	+ 5.6	+ 5.25	+ 2.88	+ 5.2
-		- 1.7	- 1.4	- 1.75	- 4.12	- 1.8
+		+ 76	+ 80	+ 75	+ 41.14	+ 14
-		- 24	- 20	- 25	- 58.86	- 26
Score		+ 52	+ 60	+ 50	- 17.72	+ 48

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

\* Possible + 60 - Min. Perc. Shape Billet

N.B.

The above confirms the coding on scar 016 indicating minimum percussion shape with billet followed by shear shaping.



## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C01067	Main Flake Scar # R14	Edge Treatment on Same Scar	Notes
1.1 Scar Size	very substantial	(1)	1. Edge Unit 1 - this unit covers scars 12 - 37 on the reverse face and scars 1-14, obverse face. (See scars 08, 09).
2.1 Edge Sharpness			
2.2 Margin Damage			
2.3 Microflakes			
2.4 Proximal Edge Morphology			
3.1 Negative Bulb of Force	indistinct		
3.2 Bulb to Scar Transition Angle	gradual		
3.3 Flake Thickness	thick (2.0 cm)		
4.1 Presence or Absence of Ribs	present		
4.2 Distinctiveness of Ribs	indistinct		
4.3 Rib Spacing And Distribution	far apart and evenly dist.		
4.4 Tearing			
5.1 Scar Shape at Distal Edge			
5.2 Scar Termination at Distal Edge			



2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar R14, C01067

	Prehistoric C01067 Scar R14	AB16-7(a) Mod./Sub. Perc. Thin Hammerstone	AB7-10 Sub. Perc. Thin Billet	AB11-11 Sub. Indirect Percussion
1.1	very substantial	+ 1	+ 1	+ 1
2.1				
2.2				
2.3				
2.4				
3.1	indistinct	+ 1	+ 75 - 25	+ 66.7 - 33.3
3.2	gradual	+ 1	+ 75 - 25	+ 66.7 - 33.3
3.3	thick	+ 20 - 80	+ 50 - 50	- 1
4.1	present	+ 80 - 20	+ 50 - 50	+ 33.3 - 66.7
4.2	indistinct	+ 1	+ 1	+ 1
4.3	far apart on distal 1/2	- 1	+ 1	+ 1
4.4	light	+ 40 - 60	+ 50 - 50	+ 33.3 - 66.7



5.1	rounded	+ 40 - 60	+ 50 - 50	+ 33.3 - 66.7
5.2	feather	+ 40 - 60	+ 25 - 75	+ 1
	+	+ 6.2	+ 6.75	+ 6.33
Total	-	- 3.8	- 3.25	- 3.67
	+	+ 63	+ 68	+ 63
%	-	- 38	- 32	- 37
Score		+ 25	+ 36	+ 26

### 2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Indeterminate + 26 - Sub. Indirect Percussion Thin (Billet on Billet)

Because of its thickness the scar coded out as billet. All other morphology, especially the striking platform size, indicates it may be indirect percussion and this is the identification used.





## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C01067	Main Flake Scar # R25	Edge Treatment on Same Scar	Notes
1.1 Scar Size	moderate	(1)	1. Edge Unit 1 (see scar R14 for coding and details.
2.1 Edge Sharpness			
2.2 Margin Damage			
2.3 Microflakes			
2.4 Proximal Edge Morphology			
3.1 Negative Bulb of Force	indistinct		
3.2 Bulb to Scar Transition Angle	gradual		
3.3 Flake Thickness	thin		
4.1 Presence or Absence of Ribs	present		
4.2 Distinctiveness of Ribs	indistinct		
4.3 Rib Spacing And Distribution	n/a		
4.4 Tearing	0		
5.1 Scar Shape at Distal Edge	rounded		
5.2 Scar Termination at Distal Edge	feather		



2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar R25 C01067

Prehistoric C01067 Scar R25		AB16-7(a) Mod./Sub. Perc. Thin Hammerstone	AB5-9(b) Mod. Perc. Thin Billet	AB8-6 Sub. Press. Thin with P.F.
1.1	moderate	+ 1	+ 1	+ 1
2.1				
2.2				
2.3				
2.4				
3.1	indistinct	+ 1	+ 80 - 20	+ 1
3.2	gradual	+ 1	+ 80 - 20	+ 1
3.3	thin	+ 80 - 20	+ 80 - 20	+ 1
4.1	present	+ 80 - 20	+ 20 - 80	+ 50 - 50
4.2	indistinct	+ 1	+ 1	+ 1
4.3	n/a	n/a	n/a	n/a
4.4	0	+ 60 - 40	+ 40 - 60	+ 75 - 25



5.1	rounded	+ 50 - 50	+ 40 - 60	+ 75 - 25
5.2	feather	+ 83.4 - 16.6	+ 50 - 50	+ 75 - 25
	+	+ 7.5	+ 5.9	+ 7.75
Total	-	- 1.5	- 3.1	- 1.25
	+	+ 83	+ 66	+ 86
%	-	- 17	- 34	- 14
Score		+ 66	+ 32	+ 72

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Highly Probable + 72 - Sub. Perc. Thin with P.F.

N.B. Adjacent scars are also pressure flaking (see R26).





## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C01087	Main Flake Scar # R26	Edge Treatment on Same Scar	Notes
1.1 Scar Size	moderate		
2.1 Edge Sharpness			
2.2 Margin Damage			
2.3 Microflakes			
2.4 Proximal Edge Morphology			
3.1 Negative Bulb of Force	indistinct		
3.2 Bulb to Scar Transition Angle	gradual		
3.3 Flake Thickness	thin		
4.1 Presence or Absence of Ribs	present		
4.2 Distinctiveness of Ribs	indistinct		
4.3 Rib Spacing And Distribution	rel. close together & evenly dist.		
4.4 Tearing	0		
5.1 Scar Shape at Distal Edge	rounded		
5.2 Scar Termination at Distal Edge	feather		



2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar R26 C01087

Prehistoric C01087 Scar R26		AB8-6 Sub. Press. Thin with P.F.	AB16-7(a) Mod./Sub. Perc. Thin Hammerstone	AB5-9(b) Mod. Perc. Thin Billet
1.1	moderate	+ 1	+ 1	+ 1
2.1				
2.2				
2.3				
2.4				
3.1	indistinct	+ 1	+ 1	+ 80 - 20
3.2	gradual	+ 1	+ 1	+ 80 - 20
3.3	thin	+ 1	+ 80 - 20	+ 80 - 20
4.1	present	+ 50 - 50	+ 80 - 20	+ 20 - 80
4.2	indistinct	+ 1	+ 1	+ 1
4.3	rel. close together & evenly dist.	+ 1	- 1	- 1
4.4	0	+ 1	+ 60 - 40	+ 40 - 60



5.1	rounded	+ 1	+ 50 - 50	+ 40 - 60
5.2	feather	+ 1	+ 83.4 - 16.6	+ 50 - 50
Total				
+		+ 9.5	+ 7.5	+ 5.9
-		- .5	- 2.5	- 4.1
+		+ 95	+ 75	+ 59
%				
-		- 5	- 25	- 41
Score		+ 90	+ 50	+ 18

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Highly Probable + 90 Sub. Pressure Thin with P.F.



## 2.4 Summary of Behavior Units (Morpho-Units) Identified on Artifact

Main Scar #	Edge Unit Scar #	Rating on Scoring Scale	Final +/- Score	Behavior Unit	Experimental Control Specimen
08		possible	+ 60	Sub. Indirect Percussion thin	AB11-1
	Edge Unit # 1	possible	+ 64	Min. rub/buffet hammerstone followed by shear shape with P.F. (see edge unit 2)	AB10-1(a)
09		possible	+ 60	Sub. Indirect Percussion thin	AB11-11
016		possible	+ 50	Sub. Indirect Percussion thin	AB11-11
	Edge Unit # 2	possible	+ 62	Mod./Sub shear shape with P.F. (preceded by min. perc. shape billet)	AB6-13(b)
021		possible	+ 50	Sub. Indirect Percussion thin	AB11-11
R1 Compo-site scar		possible	+ 60	Min. Perc. Shape Billet (followed by mod./sub. shear shape with P.F.)	AB15-18(b)
R14		indeterminate	+ 26	Sub. indirect percussion thin	AB11-11
R25		Highly Probable	+ 72	sub. press. thin with p.f.	AB8-6
R26		Highly Probable	+ 90	sub. pressure thin with p.f.	AB8-6





### 3.0 Interpretation of Behavior (Technological) Units

(a) Transforming Behavior Units into Production Units: C01067

#### 3.1 Function of Percussion Thinning/Shaping Units (moderate to very substantial size scars on specimen)

- (a) Very substantial Indirect Percussion Thinning: This is the most substantial unit on the specimen and was used as the major thinning or face paring behavior. Indirect percussion removes very large thin spatulate (or wide) flakes that usually have rounded or irregular distal edge shapes with a feather termination. Production Unit Code is 40:5, 51, 51. Indirect percussion scars are 08, 09, 016, and 021.
- (b) Minimum Percussion Shape with Billet: Identified from scar # R1 (composite scar). This is a unifacial application of margin contouring to create a steep scraping face along the right lateral margin of the reverse face of the artifact. The purpose was to create a substantial edge angle or a very strong working face. Production Unit Code is 31:2, 42, 51.

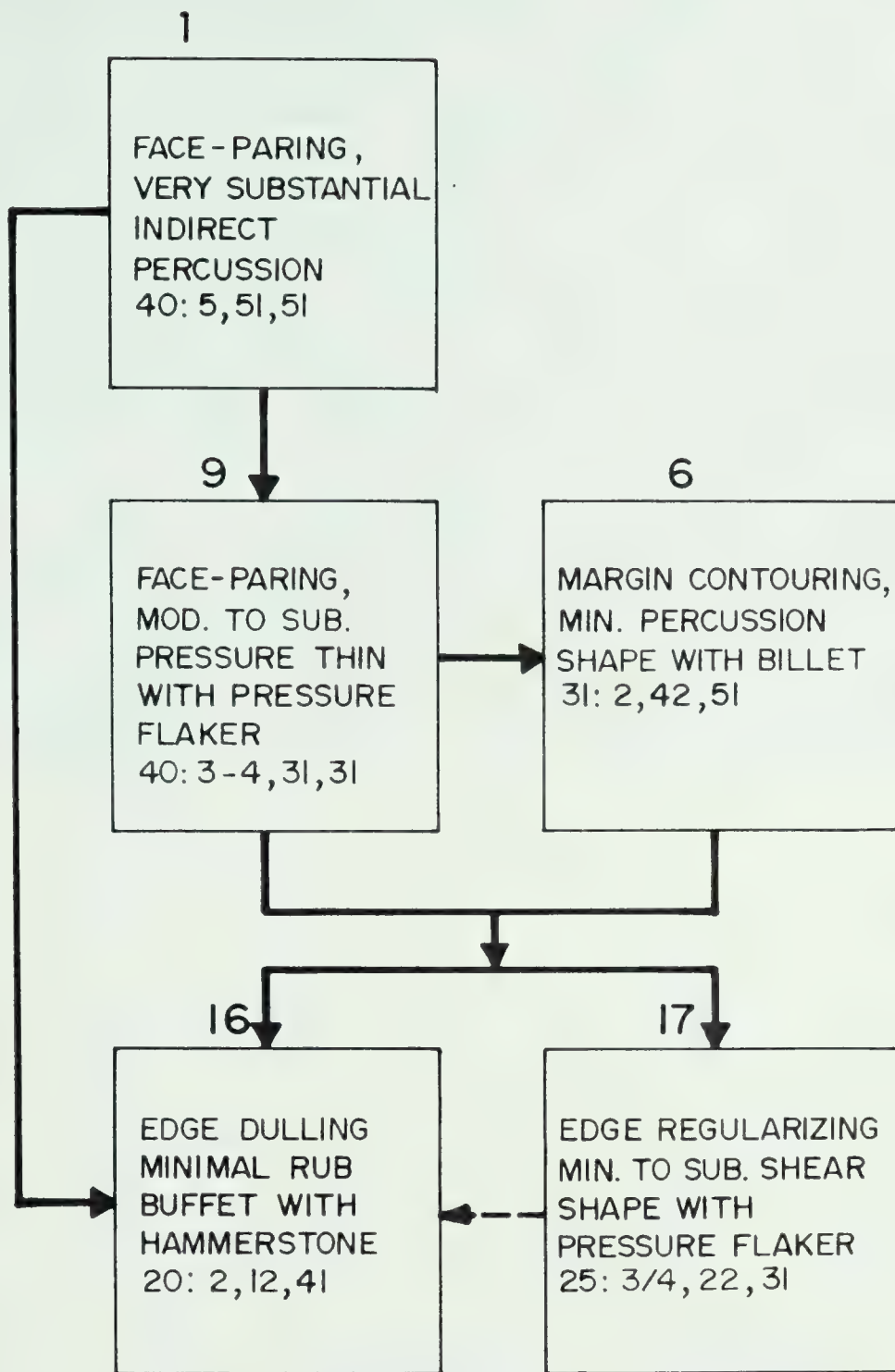
#### 3.2 Function of Pressure Thinning/Shaping Units (minimal to substantial size scars on specimen)

- (a) Mod./Substantial Pressure Thinning with Pressure Flaker: This unit is extensive on the specimen especially near the tip on the reverse side where there is a complex of pressure flakes (see scar forms for R25, R26). In fact, there appears to be overlapping pressure scars as scar R26 overlaps earlier pressure scars R27, 28, 29. This behavior unit served a secondary thinning or face paring function. Production Unit Code is 40:3/4, 31, 31.

#### 3.3 Function of Edge Units (minimal to very minimal size scars on specimen)

- (a) Minimal Rub/Buffer with Hammerstone: A rub buffet involves rubbing the edge of the artifact while at the same time dragging the tool with minimal force. This removes minimal flakes and blunts or rounds the edge so it will not crush easily. It also serves to smooth the edge somewhat (see edge unit 1 on artifact). Production Unit Code is 20:2, 12, 41.
- (b) Mod./Sub Shear Shape with Pressure Flaker: This was the final edge unit applied and served to straighten, center, and regularize the edge. Production Unit Code is 23-25:3-4, 22, 31. This unit is present on the obverse side scars 0-3 to 0-7 and on the reverse side on scar # 1 in front of 03 to 08.





(b) Reconstructing Sequencing of Production Units: C01067

### 3.4 Flow Diagram of Production Units (above)



### 3.5 Description and Discussion of Technological Grammar Found on Artifact

This prehistoric specimen has a distinctive semi-lunate outline shape quite different from the other Jordan site bifaces. However, the manufacturing units (behavior units) are essentially the same as other specimens in the collection. The major thinning unit is a very substantial indirect percussion thin which was used for face paring (thinning of the specimen). Following this one edge (Edge Unit 2) received special attention (right lateral margin, reverse face) in that billet percussion shape was used to contour the margins to create a steep angled and strong cutting/scraping edge. Some areas (especially near the curvature zone) were edge straightened, centered and regularized by means of a mod./sub shear shape with a pressure flaker. Some other edges on the artifact, especially near the tip, were thinned by means of moderate/substantial pressure flaking with a pressure flaker (see scars R25, R26). The pressure flaking is particularly prevalent on the tip of the specimen (reverse side scars R20 to R37) and in places, some overlapping is evident (scar R25 overlaps earlier pressure scars R27-29). Edge unit # 1 was applied to most of the pressure thinned areas and has been identified as a possible minimal rub/buffet with hammerstone. The rub/buffet activity involves rubbing the edge of the specimen in a dragging motion, thus blunting or rounding the edge and generally making it stronger and more serviceable (i.e., edge will not crush so easily when used). As in edge unit 2, some portions of this edge were also further treated with a mod./sub shear shape with pressure flaker (see scars R3-R8).



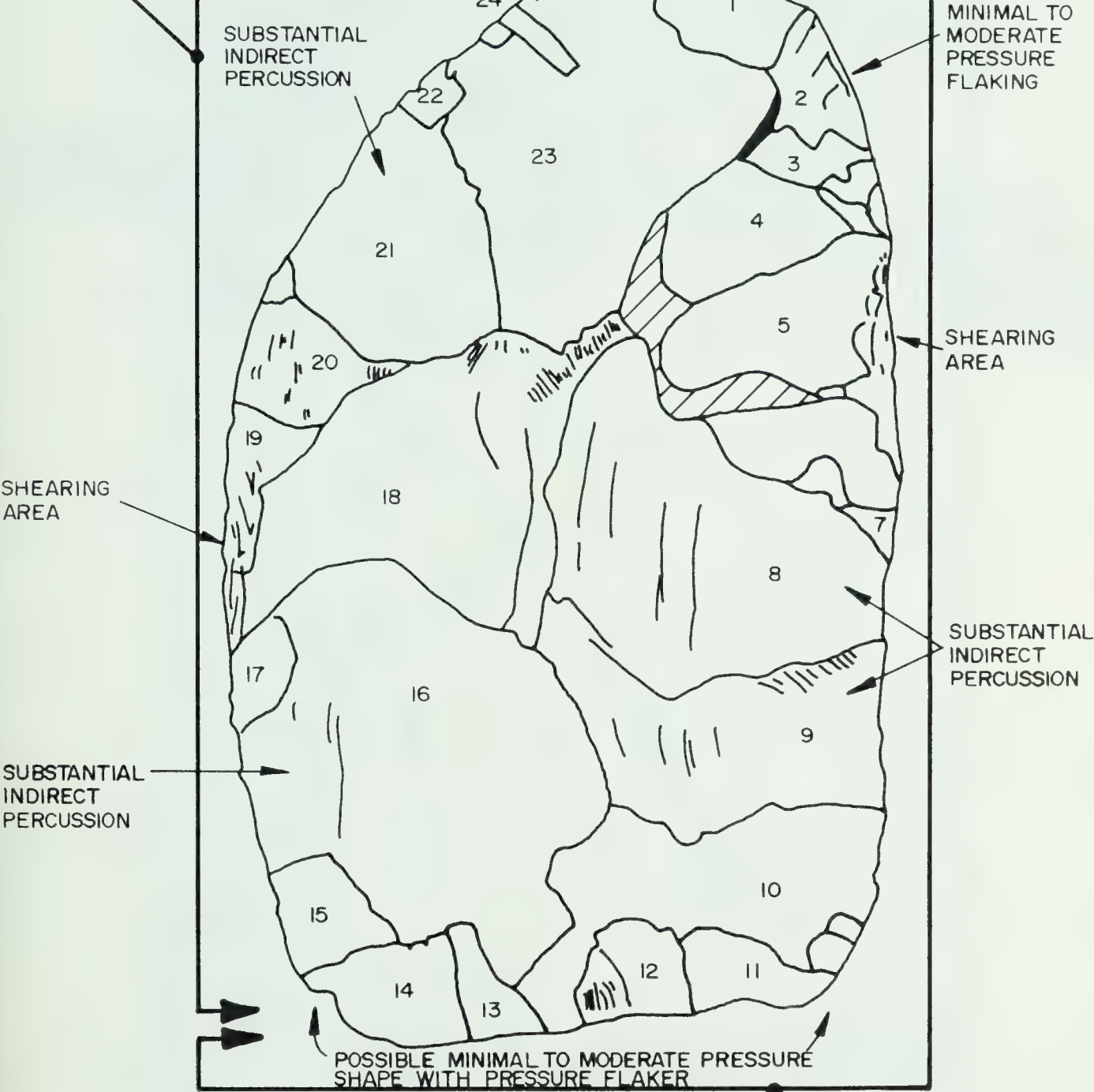


DeHa-8 ————— CO 1067

OBVERSE FACE

EDGE UNIT #2

MINIMAL PERCUSSION SHAPE  
WITH BILLET AND MODERATE TO SUBSTANTIAL  
SHEAR SHAPE  
WITH PRESSURE  
FLAKER IN  
INDICATED AREAS



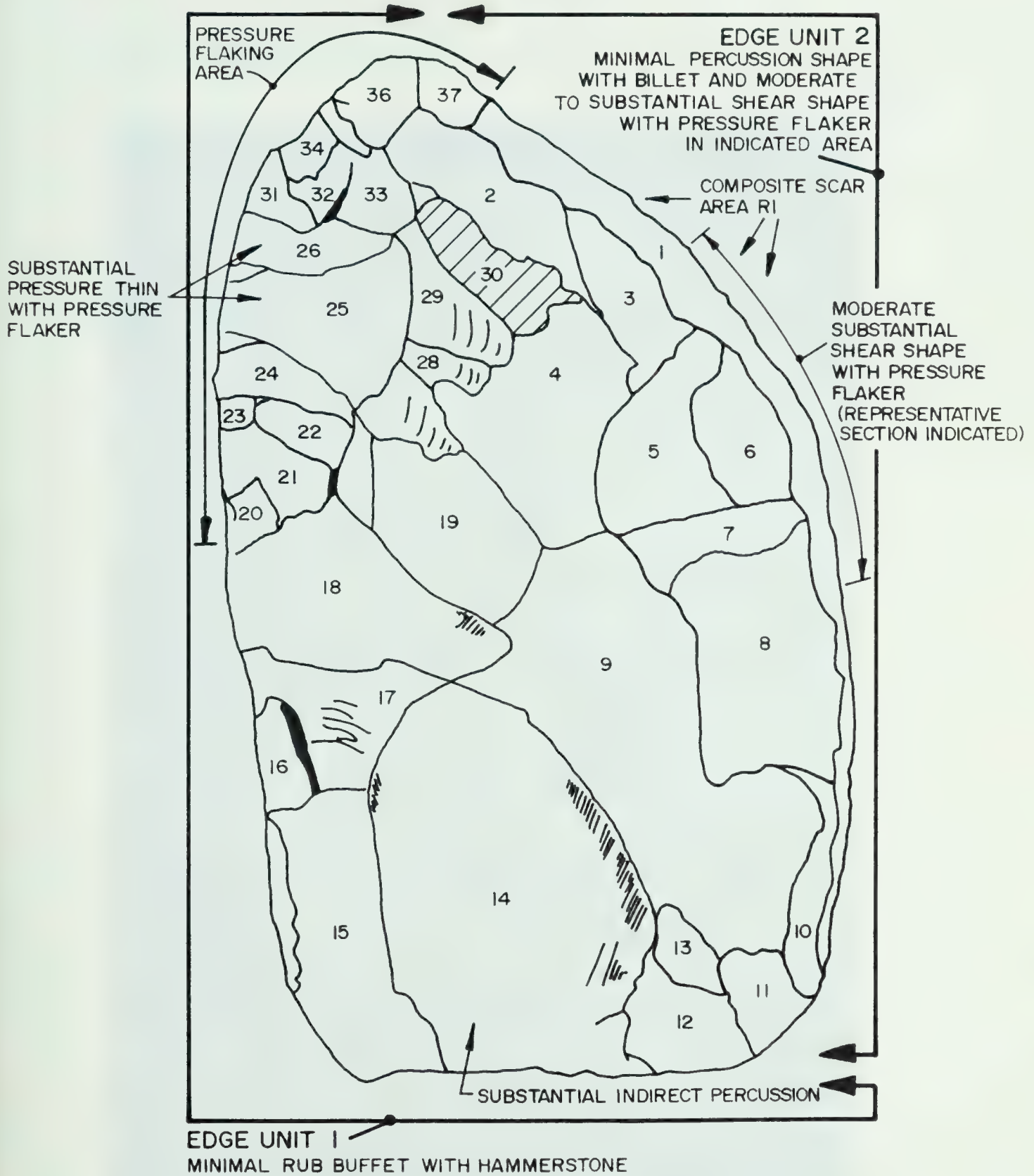
EDGE UNIT #1  
MINIMAL RUB BUFFET WITH HAMMERSTONE  
AND MINIMAL SHEAR SHAPE WITH  
PRESSURE FLAKER IN INDICATED AREA

FIGURE 40



DeHa-8 ————— CO 1067

REVERSE FACE



0 5 10 20mm

FIGURE 41





Plate 50: Prehistoric Artifact C01067, Obverse Face.







Plate 51: Prehistoric Artifact C01067, Reverse Face.





Table 63: Form for Coding and Interpreting  
Prehistoric Artifacts

1.0 Prehistoric Artifact Identification

1.1 Artifact Face: Obverse and Reverse

1.2 Prehistoric Specimen Provenience: DeHa-8 - Jordan

1.3 Specimen Catalogue #: C01071

1.4 Photographic Plate Identification: special negatives

1.5 Standard Artifact Description:

1.6 Raw Material: Welded Tuff

1.7 Shape/Artifact Class: Biface

1.8 Flaking (Bifacial/Unifacial): Bifacial

1.9 Metric Size: length - 25.6 cm  
width - 11.2 cm  
thickness - 2.0 cm

1.10 Form/Morphology Description:

This specimen (like C01073) is a very large biface (i.e., 25.6 cm long) and, at the same time, is quite thin (2.0 cm) and represents an overall symmetrical and well made artifact. The main body thinning flakes are extremely large, thin, and spatulate in shape. Extensive thinning and removing of interridge scars has taken place along the lateral margins. As well, the edge has been straightened by smoothing out some of the flat curved notches left by removal of the large thinning flakes. The base is straight but cuts across the artifact at a shallow angle and contains basal thinning flakes. Some water wear is evident on both faces and this may have partially obscured some attributes such as tearing.



## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C01071		Main Flake Scar # 03	Edge Treatment on Same Scar	Notes
1.1	Scar Size	moderate	see note (1)	1. See scar R33 for edge treatment (edge unit # 1).
2.1	Edge Sharpness			
2.2	Margin Damage			
2.3	Microflakes			
2.4	Proximal Edge Morphology			
3.1	Negative Bulb of Force	indistinct		
3.2	Bulb to Scar Transition Angle	gradual		
3.3	Flake Thickness	thin		
4.1	Presence or Absence of Ribs	present		
4.2	Distinctiveness of Ribs	indistinct		
4.3	Rib Spacing And Distribution	relatively close together, evenly distributed		
4.4	Tearing	0		
5.1	Scar Shape at Distal Edge	rounded		
5.2	Scar Termination at Distal Edge	step		



2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar 03, C01071

	Prehistoric C01071 Edge Unit	AB16-7(a) Mod./Sub. Perc. Thin Hammerstone	AB5-9(b) Mod. Perc. Thin Billet	AB8-6 Sub. Press. Thin P.F.
1.1	moderate	+ 1	+ 1	+ 1
2.1				
2.2				
2.3				
2.4				
3.1	indistinct	+ 1	+ 80 - 20	+ 1
3.2	gradual	+ 1	+ 80 - 20	+ 1
3.3	thin	+ 80 - 20	+ 80 - 20	+ 1
4.1	present	+ 80 - 20	+ 20 - 80	+ 50 - 50
4.2	indistinct	+ 1	+ 1	+ 1
4.3	rel. close together, evenly dist.	- 1	- 1	+ 1
4.4	0	+ 60 - 40	+ 80 - 20	+ 75 - 25





5.1	rounded	+ 50 - 50	+ 40 - 60	+ 75 - 25
5.2	step	+ 60 - 40	+ 50 - 50	+ 25 - 75
Total	+	+ 7.30	+ 6.3	+ 8.25
	-	- 2.70	- 3.7	- 1.75
%	+	+ 73	+ 63	+ 83
	-	- 27	- 37	- 17
Score		+ 46	+ 26	+ 66

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Possible + 66 Sub. Pressure Thin with P.F.



## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C01071	Main Flake Scar # 013	Edge Treatment on Same Scar	Notes
1.1 Scar Size	moderate	(1)	1. Edge Unit 1 is coded on the reverse side on scar form for R33.
2.1 Edge Sharpness			
2.2 Margin Damage			
2.3 Microflakes			
2.4 Proximal Edge Morphology			
3.1 Negative Bulb of Force	distinct		
3.2 Bulb to Scar Transition Angle	gradual		
3.3 Flake Thickness	thin		
4.1 Presence or Absence of Ribs	present		
4.2 Distinctiveness of Ribs	indistinct		
4.3 Rib Spacing And Distribution	far apart on distal 1/2		
4.4 Tearing	light		
5.1 Scar Shape at Distal Edge	rounded		
5.2 Scar Termination at Distal Edge	feather		



2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar 013, C01071

	Prehistoric C01071 Scar 013	AB16-7(a) Mod./Sub. Perc. Thin Hammerstone	AB5-9(b) Mod. Perc. Thin Billet
1.1	moderate	+ 1	+ 1
2.1			
2.2			
2.3			
2.4			
3.1	distinct	- 1	+ 20 - 80
3.2	gradual	+ 1	+ 80 - 20
3.3	thin	+ 80 - 20	+ 80 - 20
4.1	present	+ 80 - 20	+ 20 - 80
4.2	indistinct	+ 1	+ 1
4.3	far apart on distal 1/2	- 1	+ 1
4.4	light	- 1	+ 20 - 80



5.1	rounded	+ 50 - 50	+ 40 - 60
5.2	feather	+ 83.4 - 16.6	+ 50 - 50
	+	+ 5.93	+ 6.1
Total	-	- 4.07	- 3.9
	+	+ 59	+ 61
%	-	- 41	- 39
Score		+ 18	+ 22

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:  
Indeterminate + 22 Mod. Perc. Thin Billet





## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C01071	Main Flake Scar # 015	Edge Treatment on Same Scar	Notes
1.1 Scar Size	very substantial	(1)	1. Edge Unit 1(b), coded on scar R33.
2.1 Edge Sharpness			
2.2 Margin Damage			
2.3 Microflakes			
2.4 Proximal Edge Morphology			
3.1 Negative Bulb of Force	indistinct		
3.2 Bulb to Scar Transition Angle	gradual		
3.3 Flake Thickness	thin		
4.1 Presence or Absence of Ribs	present		
4.2 Distinctiveness of Ribs	indistinct		
4.3 Rib Spacing And Distribution	rel. far apart evenly dist.		
4.4 Tearing	light		
5.1 Scar Shape at Distal Edge	irregular		
5.2 Scar Termination at Distal Edge	feather		



2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar 015, C01071

	Prehistoric C01071 Scar 015	AB7-10 Sub. Perc. Thin Billet	AB11-11 Sub. Indirect Perc.	AB16-17 Mod./Sub. Perc. Thin Hammerstone
1.1	very substantial	+ 1	+ 1	+ 1
2.1				
2.2				
2.3				
2.4				
3.1	indistinct	+ 75 - 25	+ 66.7 - 33.3	+ 1
3.2	gradual	+ 75 - 25	+ 1	+ 1
3.3	thin	+ 50 - 50	+ 1	+ 80 - 20
4.1	present	+ 50 - 50	+ 33.3 - 66.7	+ 80 - 20
4.2	indistinct	+ 1	+ 1	+ 1
4.3	rel. far apart on dist. 1/2	+ 1	+ 1	- 1
4.4	light	+ 25 - 75	+ 33.3 - 66.7	+ 40 - 60



5.1	irregular	+ 50 - 50	+ 66.7 - 33.3	- 1
5.2	feather	+ 25 - 75	+ 1	+ 40 - 60
	+	+ 7.5	+ 8	+ 7.4
Total	-	- 3.5	- 2	- 3.6
	+	+ 75	+ 80	+ 74
%	-	- 35	- 20	- 36
Score		+ 40	+ 60	+ 34

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Possible + 60 Sub. Indirect Percussion





## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C01071	Main Flake Scar # 025	Edge Treatment on Same Scar	Notes
1.1 Scar Size	minimal (score as moderate)	(1)	1. For edge unit, see scar 031.
2.1 Edge Sharpness			2. Negative percussion bulb not present.
2.2 Margin Damage			
2.3 Microflakes			N.B. Due to the very large size of the prehistoric specimen, the scar is scored as being of moderate size.
2.4 Proximal Edge Morphology			
3.1 Negative Bulb of Force	n/a	(2)	
3.2 Bulb to Scar Transition Angle	gradual		
3.3 Flake Thickness	thin		
4.1 Presence or Absence of Ribs	present		
4.2 Distinctiveness of Ribs	indistinct		
4.3 Rib Spacing And Distribution	close together evenly dist.		
4.4 Tearing	0		
5.1 Scar Shape at Distal Edge	straight		
5.2 Scar Termination at Distal Edge	step		



2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar 025, C01071

	Prehistoric C01071 Scar 025	AB16-7(a) Mod./Sub. Perc. Thin Hammerstone	AB3-17 Mod. Perc. Hammerstone	AB5-9(b) Mod. Perc. Thin Billet	AB15-18(a) Mod. Perc. Shape Billet	AB8-6 Sub. Press. Thin P.F.
1.1	moderate	+ 1	+ 1	+ 1	+ 1	+ 1
2.1						
2.2						
2.3						
2.4						
3.1	n/a	n/a	n/a	n/a	n/a	n/a
3.2	gradual	+ 1	+ 1	+ 80 - 20	+ 1	+ 1
3.3	thin	+ 80 - 20	+ 1	+ 80 - 20	+ 85.72 - 14.28	+ 1
4.1	present	+ 80 - 20	+ 33.3 - 66.7	+ 20 - 80	+ 14.28 - 85.72	+ 50 - 50
4.2	indistinct	+ 1	+ 1	+ 1	+ 1	+ 1
4.3	close together evenly dist.	- 1	- 1	- 1	- 1	- 1
4.4	0	+ 60 - 40	+ 66.7 - 33.3	+ 80 - 20	+ 85.72 - 14.28	+ 75 - 25



5.1	straight	+ 50 - 50	+ 1	+ 60 - 40	+ 57.1 - 42.9	+ 25 - 75
5.2	step	+ 60 - 40	+ 33.3 - 66.7	+ 50 - 50	+ 28.6 - 71.4	+ 25 - 75
Total						
	+	+ 6.3	+ 6.33	+ 5.7	+ 5.7	+ 6.75
	-	- 2.7	- 2.67	- 3.3	- 3.3	- 2.25
	+	+ 70	+ 70	+ 63	+ 63	+ 75
%						
	-	- 30	- 30	- 47	- 47	- 25
Score						
		+ 40	+ 40	+ 16	+ 16	+ 50

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Possible + 50 Sub. Press. Thin P.F.



## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C01071	Main Flake Scar # 031	Edge Treatment on Same Scar	Notes
1.1 Scar Size	very sub.	very minimal (1)	1. Edge Unit 2
2.1 Edge Sharpness		sharp	2. Too indis- tinct to code.
2.2 Margin Damage		heavy	
2.3 Microflakes		heavy	
2.4 Proximal Edge Morphology		irreg./straight convex projections	
3.1 Negative Bulb of Force	indistinct		
3.2 Bulb to Scar Transition Angle	gradual		
3.3 Flake Thickness	thin		
4.1 Presence or Absence of Ribs	present		
4.2 Distinctiveness of Ribs	indistinct		
4.3 Rib Spacing And Distribution	n/a (2)		
4.4 Tearing	0		
5.1 Scar Shape at Distal Edge	rounded	curved straight	
5.2 Scar Termination at Distal Edge	feather	feather and step	





2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar 031, C01071

	Prehistoric C01071 Scar 031	AB7-10 Sub. Perc. Thin Billet	AB11-11 Sub. Indirect Percussion	AB16-17 Mod./Sub. Perc. Thin Hammerstone
1.1	very sub.	+ 1	+ 1	+ 1
2.1				
2.2				
2.3				
2.4				
3.1	indistinct	+ 75 - 25	+ 66.7 - 33.3	+ 1
3.2	gradual	+ 75 - 25	+ 1	+ 1
3.3	thin	+ 50 - 50	+ 1	+ 80 - 20
4.1	present	+ 50 - 50	+ 33.3 - 66.7	+ 80 - 20
4.2	indistinct	+ 1	+ 1	+ 1
4.3	n/a	n/a	n/a	n/a
4.4	0	+ 25 - 75	+ 66.7 - 33.3	+ 60 - 40



5.1	rounded	+ 50 - 50	+ 33.3 - 66.7	+ 40 - 60
5.2	feather	+ 25 - 75	+ 1	+ 40 - 60
<hr/>				
Total	+	+ 5.5	+ 7	+ 7
	-	- 3.5	- 2	- 2
<hr/>				
%	+	+ 61	+ 78	+ 78
	-	- 39	- 22	- 22
<hr/>				
Score		+ 22	+ 56	+ 56
<hr/>				

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Possible + 56 Sub. Indirect Perc.

The scar is too large for hammerstone and is morphologically more similar to indirect percussion.



2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar 031, C01071, Edge Unit #2

	Prehistoric C01071 Edge Unit #2	AB5-18(b)		AB5-9(a)		AB6-13(b)		AB2-2	
		Min. Perc. Shape Hammerstone	Min. Perc. Shape Hammerstone	Min. Perc. Thin Hammerstone	Shear Shape P.F.	Mod./Sub.	Min. Press. Rub with P.F.		
1.1	very minimal	+ 1		+ 1		+ 1		+ 1	
2.1	sharp	+ 1		+ 1		+ 1		+ 1	
2.2	heavy	+ 1		+ 1		+ 1		+ 1	
2.3	heavy	+ 80 - 20		+ 1		+ 1		+ 1	
2.4	irreg./straight convex projections	+ 1		+ 1		+ 1		+ 84 - 16	
3.1									
3.2									
3.3									
4.1									
4.2									
4.3									
4.4									





5.1	rounded & straight	+ 50 - 50	+ 56 - 44	+ 44 - 56	+ 1
5.2	feather and step	+ 1	+ 1	+ 1	+ 1
<hr/>					
Total		+ 6.3	+ 6.56	+ 6.44	+ 6.84
		- .7	- .44	- .56	- .16
<hr/>					
%	+	+ 90	+ 94	+ 92	+ 98
	-	- 10	- 6	- 8	- 2
<hr/>					
Score		+ 80	+ 88	+ 84	+ 96
<hr/>					

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

N.B.

Note that the above units are very close in morphology and it is difficult to separate them or distinguish between them.  
As the other two units on edge units 1 and 2 are either min. pressure rub with p.f. or mod./sub. shear shape with p.f., and as min. press. rub with p.f. scored the highest, this unit has been selected here, based on this secondary evidence, highly probable + 96 min. pressure rub with p.f.



## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C01071	Main Flake Scar # R5	Edge Treatment on Same Scar	Notes
1.1 Scar Size	moderate	(1)	1. Edge Unit 2 (see scar 031).
2.1 Edge Sharpness	sharp		
2.2 Margin Damage	0		
2.3 Microflakes	0		
2.4 Proximal Edge Morphology	flat curved notch		
3.1 Negative Bulb of Force	indistinct		
3.2 Bulb to Scar Transition Angle	gradual		
3.3 Flake Thickness	thin		
4.1 Presence or Absence of Ribs	present		
4.2 Distinctiveness of Ribs	indistinct		
4.3 Rib Spacing And Distribution	rel. far apart on distal 1/2		
4.4 Tearing	light		
5.1 Scar Shape at Distal Edge	rounded		
5.2 Scar Termination at Distal Edge	feather		



2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar R5, C01071

Prehistoric C01071 Scar R5	AB16-7(a) Mod./Sub. Perc. Thin Hammerstone	AB7-10 Sub. Perc. Thin Billet	AB5-9(b) Mod. Perc. Thin Billet	AB8-6 Sub. Perc. Thin P.F.
1.1 moderate	+ 1	+ 1	+ 1	+ 1
2.1 sharp	+ 1	+ 1	+ 1	+ 1
2.2 0	+ 1	+ 50 - 50	+ 40 - 60	+ 50 - 50
2.3 0	+ 60 - 40	+ 1	+ 60 - 40	+ 1
2.4 flat curved notch	+ 1	+ 75 - 25	+ 1	- 1
3.1 indistinct	+ 1	+ 75 - 25	+ 80 - 20	+ 1
3.2 gradual	+ 1	+ 75 - 25	+ 80 - 20	+ 1
3.3 thin	+ 80 - 20	+ 75 - 25	+ 80 - 20	+ 1
4.1 present	+ 80 - 20	+ 50 - 50	+ 20 - 80	+ 50 - 50
4.2 indistinct	+ 1	+ 1	+ 1	+ 1
4.3 rel. far apart on distal 1/2	- 1	+ 1	+ 1	- 1
4.4 light	+ 40 - 60	+ 25 - 75	+ 20 - 80	+ 25 - 75



5.1	rounded	+ 40 - 60	+ 50 - 50	+ 40 - 60	+ 75 - 25
5.2	feather	+ 40 - 60	+ 25 - 75	+ 50 - 50	+ 75 - 25
Total					
	+	+ 0.4	+ 10.0	+ 9.7	+ 9.75
	-	- 3.6	- 4.0	- 4.3	- 4.25
%					
	+	+ 74	+ 71	+ 69	+ 70
	-	- 26	- 29	- 31	- 30
Score					
		+ 48	+ 42	+ 38	+ 40

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Possible + 42 Sub. Perc. Thin Billet

Based on the rib distribution, the scar is identified as moderate/substantial percussion thin with billet.





## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C01071	Main Flake Scar # R15	Edge Treatment on Same Scar	Notes
1.1 Scar Size	substantial	(1)	1. Edge Unit 2 See scar 031.
2.1 Edge Sharpness	n/a		2. Too indis- tinct to code.
2.2 Margin Damage	n/a		
2.3 Microflakes	n/a		
2.4 Proximal Edge Morphology	flat curved notch		
3.1 Negative Bulb of Force	indistinct		
3.2 Bulb to Scar Transition Angle	gradual		
3.3 Flake Thickness	thin		
4.1 Presence or Absence of Ribs	present		
4.2 Distinctiveness of Ribs	indistinct		
4.3 Rib Spacing And Distribution	rel. far apart on distal 1/2		
4.4 Tearing	light		
5.1 Scar Shape at Distal Edge	irregular		
5.2 Scar Termination at Distal Edge	feather		



2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar R15, C01071

	Prehistoric C01071 Scar R15	AB7-10 Sub. Perc. Thin Billet	AB11-11 Sub. Indirect Percussion	AB16-7 Mod./Sub. Perc. Thin Hammerstone
1.1	substantial	+ 1	+ 1	+ 1
2.1				
2.2				
2.3				
2.4	flat curved notch	+ 1	+ 1	+ 1
3.1	indistinct	+ 75 - 25	+ 66.7 - 33.3	+ 1
3.2	gradual	+ 75 - 25	+ 1	+ 1
3.3	thin	+ 50 - 50	+ 1	+ 80 - 20
4.1	present	+ 50 - 50	+ 33.3 - 66.7	+ 80 - 20
4.2	indistinct	+ 1	+ 1	+ 1
4.3	rel. far apart on distal 1/2	+ 1	+ 1	- 1
4.4	light			



5.1	irregular	+ 50 - 50	+ 66.7 - 33.3	- 1
5.2	feather	+ 25 - 75	+ 1	+ 40 - 60
	+	+ 7.5	+ 9	+ 7.4
Total	-	- 3.5	- 2	- 3.6
	+	+ 68	+ 82	+ 67
%	-	- 39	- 18	- 33
Score		+ 29	+ 64	+ 44

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Possible + 64 Sub. Indirect Percussion





## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C01071	Main Flake Scar # R17	Edge Treatment on Same Scar	Notes
1.1 Scar Size	moderate	(1)	1. Edge Unit 2 (see scar 031).
2.1 Edge Sharpness			2. Ribs appear to be natural or from an earlier scar - not used for scoring.
2.2 Margin Damage			
2.3 Microflakes			
2.4 Proximal Edge Morphology			
3.1 Negative Bulb of Force	indistinct		
3.2 Bulb to Scar Transition Angle	gradual		
3.3 Flake Thickness	thin		
4.1 Presence or Absence of Ribs	present		
4.2 Distinctiveness of Ribs	indistinct		
4.3 Rib Spacing And Distribution	n/a (2)		
4.4 Tearing	light		
5.1 Scar Shape at Distal Edge	rounded		
5.2 Scar Termination at Distal Edge	feather		



2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar R17, C01071

	Prehistoric C01071 R17	AB16-7(a) Mod./Sub. Perc. Thin Hammerstone	AB5-9(b) Mod. Perc. Thin Billet	AB8-6 Sub. Perc. Thin with P.F.
1.1	moderate	+ 1	+ 1	+ 1
2.1				
2.2				
2.3				
2.4				
3.1	indistinct	+ 1	+ 80 - 20	+ 1
3.2	gradual	+ 1	+ 80 - 20	+ 1
3.3	thin	+ 80 - 20	+ 80 - 20	+ 1
4.1	present	+ 80 - 20	+ 20 - 80	+ 50 - 50
4.2	indistinct	+ 1	+ 1	+ 1
4.3	n/a	n/a	n/a	n/a
4.4	light	- 1	+ 20 - 80	+ 25 - 75



5.1	rounded	+ 50 - 50	+ 40 - 60	+ 75 - 25
5.2	feather	+ 83.4 - 16.6	+ 50 - 50	+ 75 - 25
	+	+ 6.93	+ 5.7	+ 7.25
Total	-	- 2.07	- 3.3	- 1.75
	+	+ 77	+ 63	+ 81
%	-	- 23	- 37	- 19
Score		+ 54	+ 26	+ 62

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Possible + 82 Substantial Pressure Thin with Pressure Flaker.



## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C01071	Main Flake Scar # R19	Edge Treatment on Same Scar	Notes
	(1)	(2)	
1.1 Scar Size	minimal (score as mod.)		1. Due to the very large size of the prehistoric artifact, the scar will be scored as moderate in size.
2.1 Edge Sharpness			
2.2 Margin Damage			
2.3 Microflakes			2. Edge Unit 2 (see scar 031).
2.4 Proximal Edge Morphology			
3.1 Negative Bulb of Force	indistinct		
3.2 Bulb to Scar Transition Angle	gradual		
3.3 Flake Thickness	thin		
4.1 Presence or Absence of Ribs	present		
4.2 Distinctiveness of Ribs	indistinct		
4.3 Rib Spacing And Distribution	rel. close together & evenly dist.		
4.4 Tearing	0		
5.1 Scar Shape at Distal Edge	rounded		
5.2 Scar Termination at Distal Edge	feather		





2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar R19, C01071

Prehistoric C01071 Scar R19		AB16-7(a) Mod./Sub. Perc. Thin Hammerstone		AB3-17 Mod. Perc. Hammerstone		AB5-9(b) Mod. Perc. Thin Billet		AB15-18(a) Mod. Perc. Shape Billet		AB8-6 Sub. Pressure Thin P.F.	
1.1	moderate	+ 1		+ 1		+ 1		+ 1		+ 1	
2.1											
2.2											
2.3											
2.4											
3.1	indistinct	+ 1		+ 1		+ 80 - 20		+ 85.72 - 14.28		+ 1	
3.2	gradual	+ 1		+ 1		+ 80 - 20		+ 1		+ 1	
3.3	thin	+ 80 - 20		+ 1		+ 80 - 20		+ 85.72 - 14.28		+ 1	
4.1	present	+ 80 - 20		+ 33.3 - 66.7		+ 20 - 80		+ 14.28 - 85.72		+ 50 - 50	
4.2	indistinct	+ 1		+ 1		+ 1		+ 1		+ 1	
4.3	rel. close together & evenly dist.	- 1		- 1		- 1		- 1		+ 1	
4.4	0	+ 60 - 40		- 1		+ 40 - 60		+ 85.72 - 14.28		+ 75 - 25	



5.1	rounded	+ 50 - 50	- 1	+ 40 - 60	+ 42.9 - 57.1	+ 75 - 25
5.2	feather	+ 83.4 - 16.6	+ 33.3 - 66.7	+ 50 - 50	+ 71.4 - 28.6	+ 75 - 25
	+	+ 7.53	+ 5.67	+ 5.9	+ 6.9	+ 8.75
Total	-	- 2.57	- 4.33	- 4.1	- 3.1	- 1.25
	+	+ 75	+ 57	+ 59	+ 69	+ 88
%	-	- 25	- 43	- 41	- 31	- 12
Score		+ 50	+ 14	+ 18	+ 38	+ 76

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Highly Probable + 76 Sub. Pressure Thin P.F.



## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C01071	Main Flake Scar # R24	Edge Treatment on Same Scar	Notes
1.1 Scar Size	min. - mod. (score as mod.)	very minimal (1)	1. Edge Unit 3 - scars 22-27 reverse face and scars 17-21 obverse face.
2.1 Edge Sharpness		sharp	
2.2 Margin Damage		light	
2.3 Microflakes		heavy	
2.4 Proximal Edge Morphology		irreg./straight convex projections	
3.1 Negative Bulb of Force	indistinct		
3.2 Bulb to Scar Transition Angle	gradual		
3.3 Flake Thickness	thin		
4.1 Presence or Absence of Ribs	present		
4.2 Distinctiveness of Ribs	indistinct		
4.3 Rib Spacing And Distribution	rel. far apart and evenly dist.		
4.4 Tearing	0		
5.1 Scar Shape at Distal Edge	irregular	rounded (some straight)	
5.2 Scar Termination at Distal Edge	feather	step/feather	





2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar R24, C01071

Prehistoric C01071 Scar R24	AB9-5 Mod. Perc. Thin Billet	AB3-17 Mod. Perc. Hammerstone	AB16-7(a) Sub./Mod. Perc. Thin Hammerstone	AB8-6 Sub. Pressure Thin with P.F.	AB12-19 Sub. Perc. Shape Billet
1.1 moderate	+ 1	+ 1	+ 1	+ 1	+ 1
2.1					
2.2					
2.3					
2.4					
3.1 indistinct	+ 80 - 20	+ 1	+ 1	+ 1	+ 1
3.2 gradual	+ 80 - 20	+ 1	+ 1	+ 1	+ 1
3.3 thin	+ 80 - 20	+ 1	+ 80 - 20	+ 1	+ 75 - 25
4.1 present	+ 20 - 80	+ 33.3 - 66.7	+ 80 - 20	+ 50 - 50	+ 25 - 75
4.2 indistinct	+ 1	+ 1	+ 1	+ 1	+ 1
4.3 n/a					
4.4 0	+ 80 - 20	+ 66.7 - 33.3	+ 60 - 40	+ 75 - 25	+ 75 - 25



5.1	irregular	- 1	- 1	- 1	- 1
5.2	feather	+ 50 - 50	+ 33.3 - 66.7	+ 40 - 60	+ 75 - 25
	+	+ 5.90	+ 6.33	+ 6.60	+ 7
Total	-	- 3.10	- 2.67	- 2.40	- 2
	+	+ 66	+ 70	+ 73	+ 77
%	-	- 34	- 30	- 27	- 23
Score		+ 32	+ 40	+ 46	+ 54

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Possible + 54 - Sub. Pressure Thin with Pressure Flaker



2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar, C01071, Edge Unit #3 (Scored on Scar R24)

	Prehistoric C01071 Edge Unit 3	AB2-2(b)		AB16-13(a)		AB6-13(b)		AB10-1(b)		AB16-7(b)	
		Min. Press. Rub with P.F.		Min. Shear Shape with P.F.		Mod./Sub. Shear Shape with P.F.		Min. Rub Buffet Billet		Min. Perc. Thin Hammerstone	
1.1	very minimal	+ 1		+ 1		+ 1		+ 1		- 1	
2.1	sharp	+ 1		+ 33.3 - 66.7		+ 1		- 1		+ 1	
2.2	light	- 1		+ 16.7 - 83.3		- 1		+ 15 - 85		- 1	
2.3	heavy	+ 1		+ 66.7 - 33.3		+ 1		- 1		+ 50 - 50	
2.4	irreg./straight convex projections	+ 84 - 16		+ 1		+ 1		+ 1		+ 1	
3.1											
3.2											
3.3											
4.1											
4.2											
4.3											
4.4											



5.1	rounded (some straight)	+ 80 - 20	+ 50 - 50	+ 44 - 56	- 1	+ 75 - 25
5.2	step/ feather	+ 1	+ 20 - 80	+ 1	+ 20 - 80	+ 1
Total	+	+ 5.64	+ 3.9	+ 5.44	+ 2.35	+ 4.25
	-	- 1.36	- 3.1	- 1.56	- 4.65	- 2.75
%	+	+ 81	+ 56	+ 78	+ 34	+ 61
	-	- 19	- 44	- 22	- 66	- 39
Score		+ 62	+ 12	+ 56	- 32	+ 22

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Possible + 62 - Min. Press. Rub with P.F.





## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C01071	Main Flake Scar # R33	Edge Treatment on Same Scar	Notes
1.1 Scar Size	substantial	very minimal (1)	1. Edge Unit 1 (scars 26-46 reverse face).
2.1 Edge Sharpness		sharp	
2.2 Margin Damage		light	
2.3 Microflakes		heavy	
2.4 Proximal Edge Morphology		irregular or straight with convex proj.	
3.1 Negative Bulb of Force	distinct		
3.2 Bulb to Scar Transition Angle	gradual		
3.3 Flake Thickness	thin		
4.1 Presence or Absence of Ribs	0		
4.2 Distinctiveness of Ribs	n/a		
4.3 Rib Spacing And Distribution	n/a		
4.4 Tearing	0		
5.1 Scar Shape at Distal Edge	irregular	straight/ irregular	
5.2 Scar Termination at Distal Edge	feather	pred. step some feather	



2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar R33, C01071

	Prehistoric C01071 Scar R33	AB11-11 Sub. Indirect Percussion	AB7-10 Sub. Perc. Thin Billet	AB16-7(a) Mod./Sub. Perc. Thin Hammerstone
1.1	substantial	+ 1	+ 1	+ 1
2.1				
2.2				
2.3				
2.4				
3.1	distinct	+ 33.3 - 66.7	+ 25 - 75	- 1
3.2	gradual	+ 1	+ 75 - 25	+ 1
3.3	thin	+ 1	+ 50 - 50	+ 80 - 20
4.1	0	+ 66.7 - 33.3	+ 50 - 50	+ 20 - 80
4.2	n/a	n/a	n/a	n/a
4.3	n/a	n/a	n/a	n/a
4.4	0	+ 66.7 - 33.3	+ 75 - 25	- 1



5.1	irregular	+ 66.7 - 33.3	+ 50 - 50	+ 40 - 60
5.2	feather	+ 1	+ 50 - 50	+ 40 - 60
	+	+ 6.33	+ 4.75	+ 3.8
Total	-	- 1.67	- 3.25	- 4.2
	+	+ 79	+ 59	+ 48
%	-	- 21	- 41	- 52
Score		+ 58	+ 18	- 4

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Possible + 58 - Sub. Indirect Percussion





2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar, C01071 Edge Unit 1 (Scored on Scar R33 Form)

	Prehistoric C01071 Edge Unit 1(b)	AB2-2(b)		AB6-13(a)		AB6-13(b)		AB10-1(b)		AB10-1(a)	
		Min. Press.	Rub P.F.	Min. Shear	Shape P.F.	Mod./Sub. Shear	Shape P.F.	Min. Rub	Buffet Billet	Min. Rub	Buffet Hammerstone
1.1	very minimal	+ 1		+ 1		+ 1		+ 1		+ 1	
2.1	sharp	+ 1		+ 33.3 - 66.7		+ 1		- 1		- 1	
2.2	light	- 1		+ 16.7 - 83.3		- 1		+ 15 - 85		- 1	
2.3	heavy	+ 1		+ 66.7 - 33.3		+ 1		- 1		+ 1	
2.4	irreg./straight convex proj.	+ 84 - 16		+ 1		+ 1		+ 1		+ 1	
3.1											
3.2											
3.3											
4.1											
4.2											
4.3											
4.4											



5.1	straight/irreg.	+ 50 - 50	+ 1	+ 1	+ 20 - 80	+ 75 - 25
5.2	pred. step some feather	+ 1	+ 20 - 80	+ 50 - 50	- 1	+ 80 - 20
<hr/>						
Total	+	+ 5.34	+ 4.37	+ 5.5	+ 2.35	+ 4.55
	-	- 1.66	- 2.63	- 1.5	- 4.65	- 2.45
<hr/>						
%	+	+ 76	+ 62	+ 79	+ 34	+ 65
	-	- 24	- 38	- 21	- 66	- 35
<hr/>						
Score		+ 52	+ 24	+ 58	+ 32	+ 30

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

- Possible + 58 - Mod./Sub. Shear Shape P.F.
- \* Possible + 52 - Min. Press. Rub P.F.

\* After comparing the experimental specimen morphology and considering that the adjacent edge unit #3 is also min. pressure rub with p.f., the above identification was made.



## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C01071		Main Flake Scar # R38	Edge Treatment on Same Scar	Notes
1.1	Scar Size	very sub.	(1)	1. Edge unit 1(b) - see scar R33.
2.1	Edge Sharpness			
2.2	Margin Damage			
2.3	Microflakes			
2.4	Proximal Edge Morphology			
3.1	Negative Bulb of Force	distinct		
3.2	Bulb to Scar Transition Angle	gradual		
3.3	Flake Thickness	thin		
4.1	Presence or Absence of Ribs	0		
4.2	Distinctiveness of Ribs	0		
4.3	Rib Spacing And Distribution	0		
4.4	Tearing	0		
5.1	Scar Shape at Distal Edge	irregular		
5.2	Scar Termination at Distal Edge	feather		



2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar R38, C01071

	Prehistoric C01071 Scar R38	AB16-7(a) Mod./Sub. Perc. Thin Hammerstone	AB7-10 Sub. Perc. Thin Billet	AB11-11 Sub. Indirect Perc.
1.1	very substantial	+ 1	+ 1	+ 1
2.1				
2.2				
2.3				
2.4				
3.1	distinct	- 1	+ 25 - 75	+ 33.3 - 66.7
3.2	gradual	+ 1	+ 75 - 25	+ 1
3.3	thin	+ 80 - 20	+ 50 - 50	+ 1
4.1	0	+ 20 - 80	+ 50 - 50	+ 66.7 - 33.3
4.2	n/a	n/a	n/a	n/a
4.3	n/a	n/a	n/a	n/a
4.4	0	+ 60 - 40	+ 75 - 25	+ 66.7 - 33.3





5.1	irregular	- 1	+ 50 - 50	+ 66.7 - 33.3
5.2	feather	+ 1	+ 1	+ 1
	+	+ 4.6	+ 5.25	+ 6.33
Total	-	- 3.4	- 2.75	- 1.67
	+	+ 58	+ 66	+ 79
%	-	- 42	- 34	- 21
Score		+ 16	+ 32	+ 58

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Possible + 58 - Sub. Indirect Perc.



Main Scar #	Edge Unit Scar #	Rating on Scoring Scale	Final +/- Score	Behavior Unit	Experimental Control Specimen
03		Possible	+ 66	Substantial Pressure Thine with P.F.	AB8-6
013		Indeterminate	+ 22	Mod. Perc. Thin Billet	AB5-9(a)
015		Possible	+ 64	Sub. Indirect Percussion	AB11-11
025		Possible	+ 50	Sub. Pressure Thin P.F. <u>N.B.</u> Minimum and moderate pressure thinning is also present on artifact.	AB8-6
031		Possible	+ 56	Sub. Indirect Percussion	AB11-11
	Edge Unit # 2	Highly Probable	+ 96	Minimum Pressure Rub with P.F.	AB2-2(b)
R5		Possible	+ 42	Mod./Sub. Percussion Thin Billet	AB7-10
R15		Possible	+ 64	Sub. Indirect Percussion	AB11-11
R17		Possible	+ 62	Sub. Pressure Thin with P.F.	AB8-6
R19		Highly Probable	+ 76	Sub. Pressure Thin P.F.	AB8-6



Main Scar #	Edge Unit Scar #	Rating on Scoring Scale	Final +/- Score	Behavior Unit	Experimental Control Specimen
R24		Possible	+ 54	Sub. Pressure Thin with P.F.	AB8-6
	Edge Unit #3	Possible	+ 62	Min. Press. Rub with P.F.	AB2-2(b)
R33		Possible	+ 58	Sub. Indirect Percussion	AB11-1
	Edge Unit # 1	Possible	+ 52	Min. Press. Rub with P.F. [overlaps unit 1(a)]	AB2-2(b)
R38		Possible	+ 58	Sub. Indirect Percussion	





### 3.0 Interpretation of Behavior (Technological) Units

#### (a) Transforming Behavior Units into Production Units:

### 3.1 Function of Percussion Thinning/Shaping Units (moderate to very substantial size scars on specimen)

- (a) Substantial Indirect Percussion Thinning: This unit was the major means of thinning the specimen, and five flakes (O15, O31, R15, R33, and R38) have been identified as pertaining to this behavior unit. Indirect percussion is a billet on billet technique which produces flakes having the morphological characteristics between those of hammerstone/pressure and billet. The flakes are extremely large and spatulate, generally with irregular feathered terminations. Production Unit Code is 40:5, 51, 51.
- (b) Mod./Sub. Percussion Thin with Billet: Identified from flakes O13 and R5, this unit was sparingly used for face paring or thinning. Production Unit Code is 40:3, 41, 41.

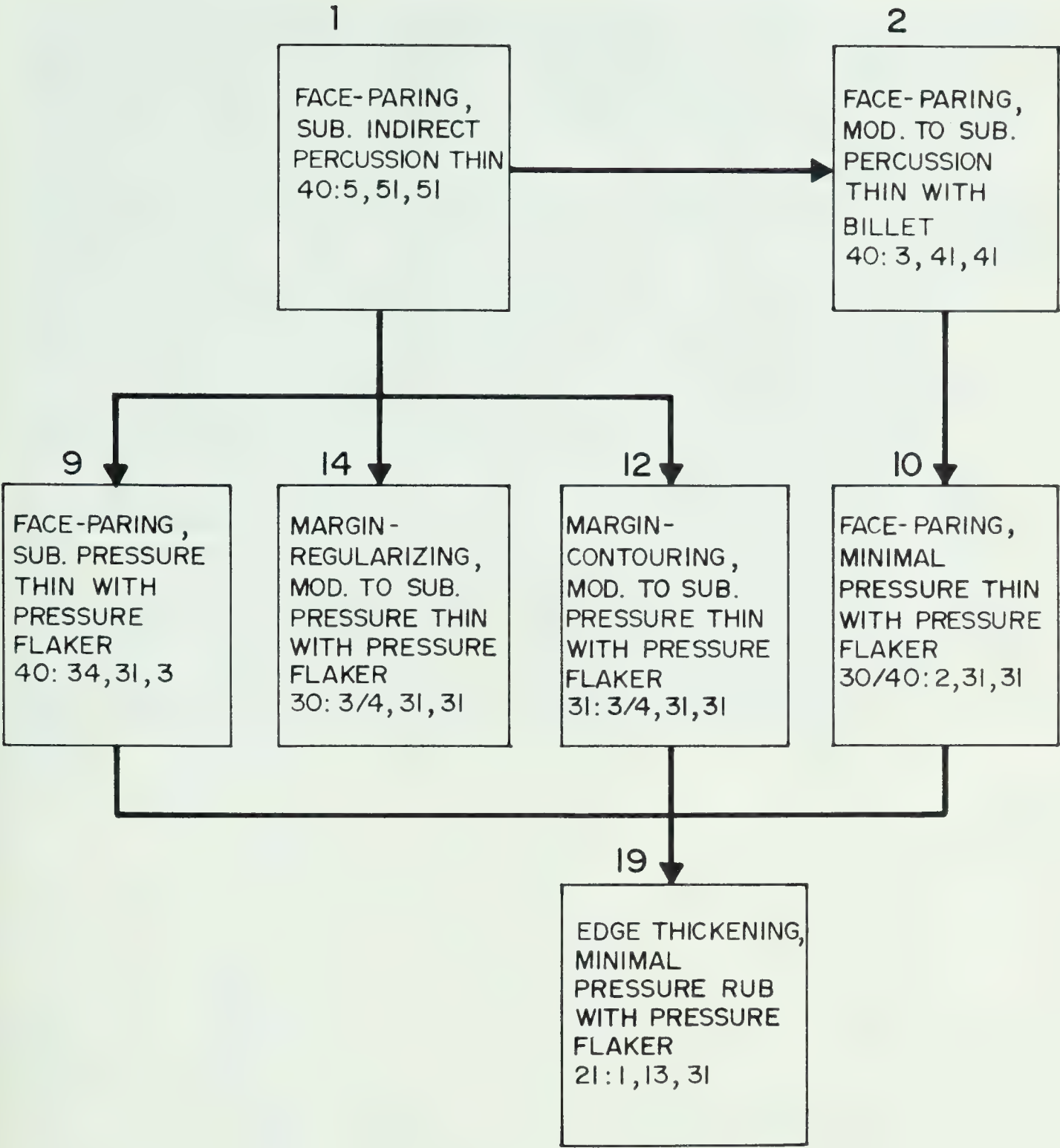
### 3.2 Function of Pressure Thinning/Shaping Units (minimal to substantial size scars on specimen)

There are extensive isolated or small groups of pressure flakes (mod. to sub.) (see scars O25, R19) on the artifact. The units were used for secondary face paring margin contouring and for removal of inter-ridge scars or margin regularizing. Although most scars coded (O3, R17, R19, R4) are substantial, minimum and moderate scars are also present. Production Unit Code is 30/31/40:2/3/4, 31, 31.

### 3.3 Function of Edge Units (minimal to very minimal size scars on specimen)

- (a) Minimum Pressure Rub with Pressure Flaker: This unit, coded and identified from edge units 1, 2 and 3, was applied to all external margins of the artifact. Some areas of mod./sub. shear shaping may also have been undertaken but as the morphology of the two units is very similar, these cannot be readily identified. A pressure rub involves the use of the end of a pressure flaker to rub across the edge of an artifact - this removes any overly thin material and strengthens the edge. The resulting margin is characteristically rough with small convex projections and some minimal flake removals. Margin damage and micro flakes are two of the morphologies associated with this unit. Production Code Unit is 21:2, 13, 31.





(b) Reconstructing Sequencing of Production Units: C01071

3.4 Flow Diagram of Production Units (above)



### 3.5 Description and Discussion of Technological Grammar Found on Artifact

This is one of two extremely large bifaces analyzed as part of the Jordan site collection (DeHa-8). The manufacture of this specimen (C01071) is essentially identical to the other specimen (C01073) except that more widespread use is made of pressure flaking units, replacing billet percussion to a minor extent. The technological basis of this specimen consists of six behavior units. The major production unit positively identified from analysis of five scars (O15, O31, R15, R33, R38) is substantial indirect percussion face paring. This was the major technique used to reduce (thin) the specimen. Along the right obverse lateral margin some percussion thinning flakes were removed by billet work. Other billet flakes may also be present but they are not concentrated at any one spot. One positive flake scar identification (O13) was made regarding this unit. The primary indirect percussion and secondary billet face paring was followed up in places by minimum, moderate and substantial pressure thinning with a pressure flaker. Both types of secondary face paring appear to have served to remove some of the inter-flake scar ridges (margin-regularizing) and perhaps some margin-contouring. Margin contouring involves increasing the edge angle to form a strong bifacial edge. Identified scars are (O3, R17, R19, R24). The final step in the manufacture of this specimen was to treat the edges with a minimum pressure rub with a pressure flaker. Like the other large biface, virtually all edges were treated (i.e., Edge Units 1, 2 and 3). Pressure rubbing removes any overly thin material on the edge, blunts and rounds it, thereby adding considerable strength to the margin. The specimen is complete and has not been broken.





FIGURE 42

OBVERSE FACE

EDGE UNIT \*2  
BIFACIAL UNIT ON  
BOTH SIDES-  
MINIMAL  
PRESSURE RUB  
WITH PRESSURE  
FLAKER

EDGE UNIT \*1  
MINIMAL  
PRESSURE RUB  
WITH PRESSURE  
FLAKER

SUBSTANTIAL  
INDIRECT  
PERCUSSION THIN

BADLY CRUSHED  
PLATFORM AREA  
(FAILED)

SUBSTANTIAL  
PRESSURE THIN  
WITH PRESSURE  
FLAKER

MODERATE  
PERCUSSION  
THIN WITH  
BILLET

SUBSTANTIAL  
INDIRECT  
PERCUSSION  
THIN

EDGE UNIT \*3 - BIFACIAL- MINIMUM PRESSURE RUB  
WITH PRESSURE FLAKER

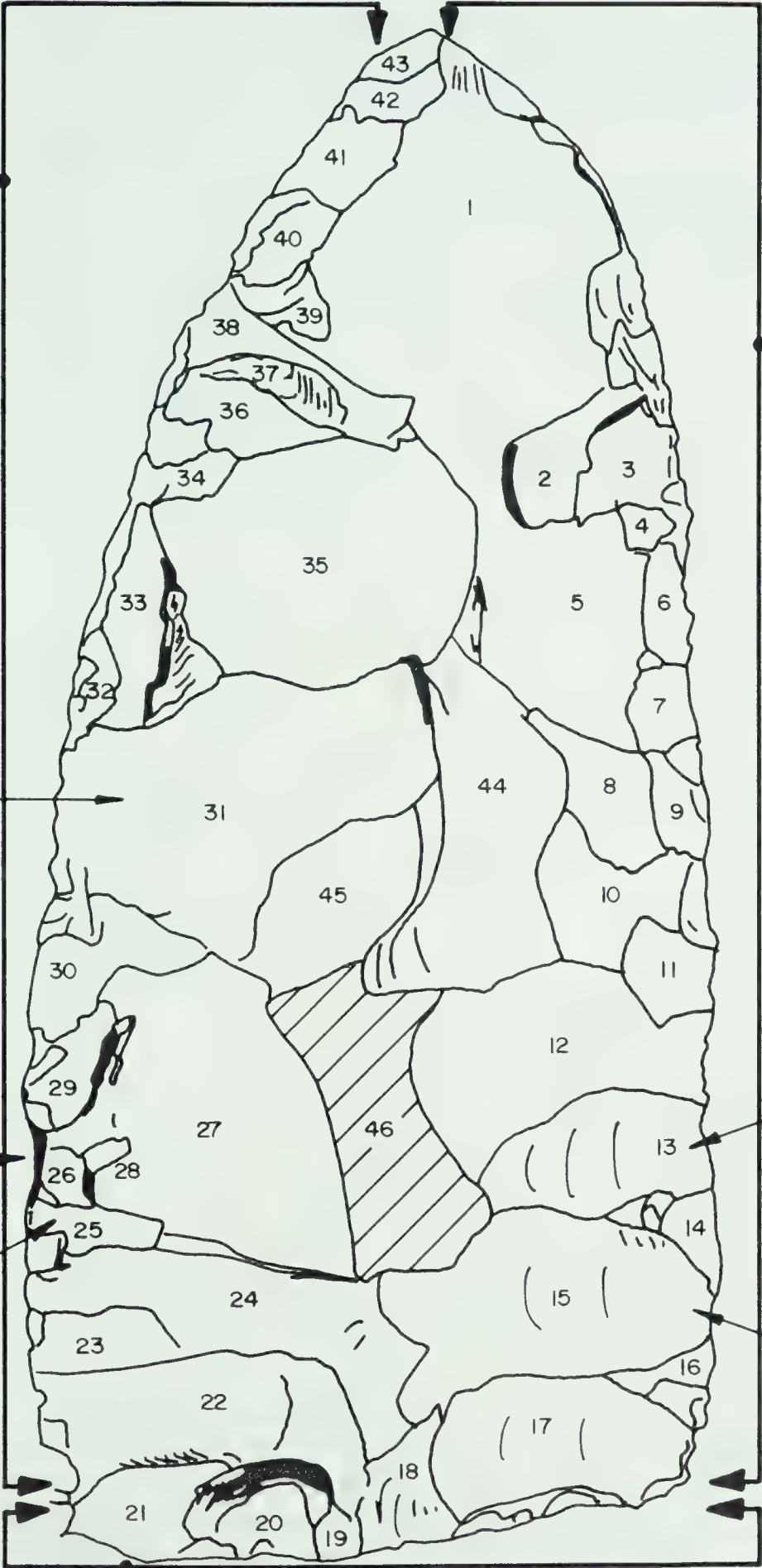
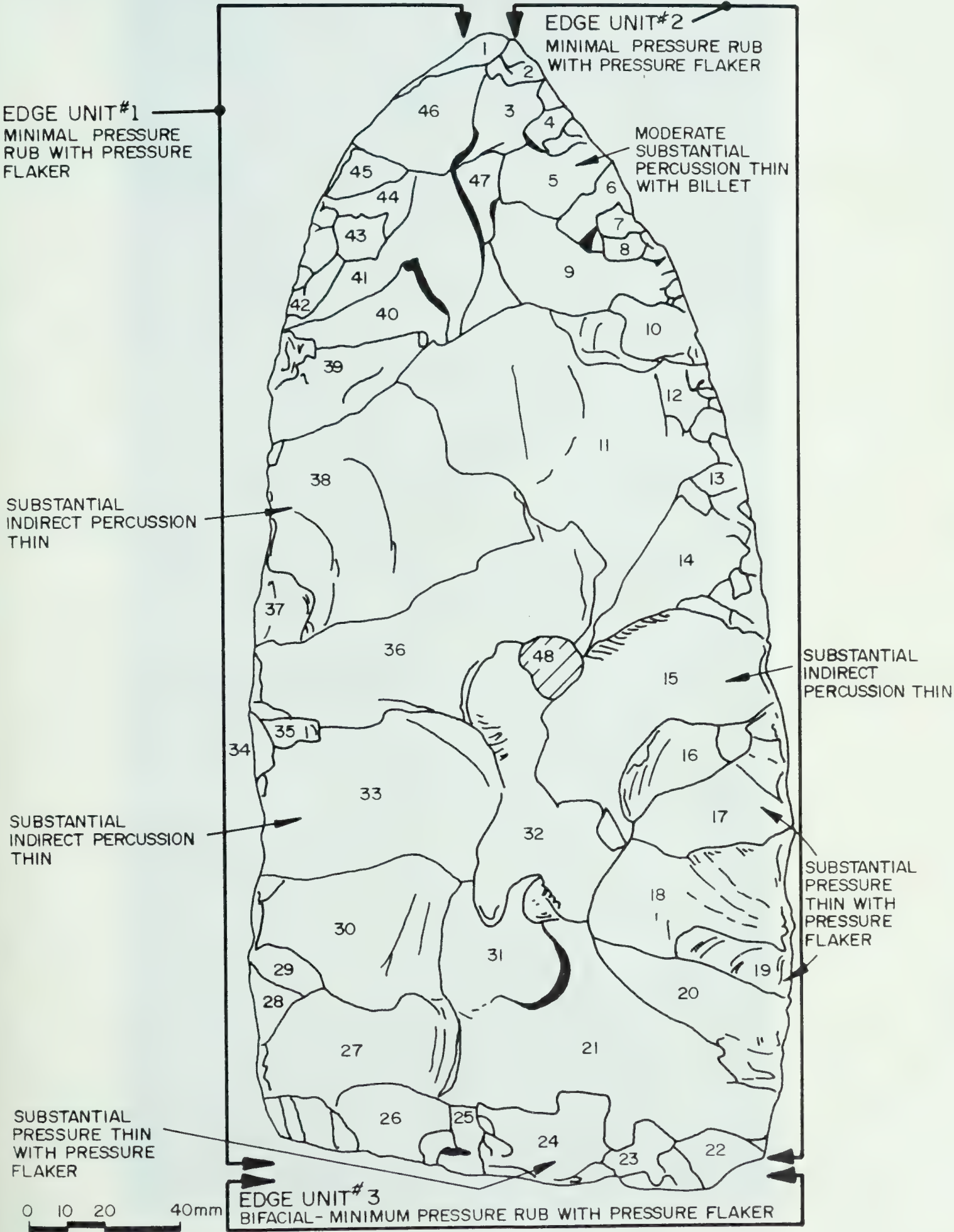






FIGURE 43

REVERSE FACE





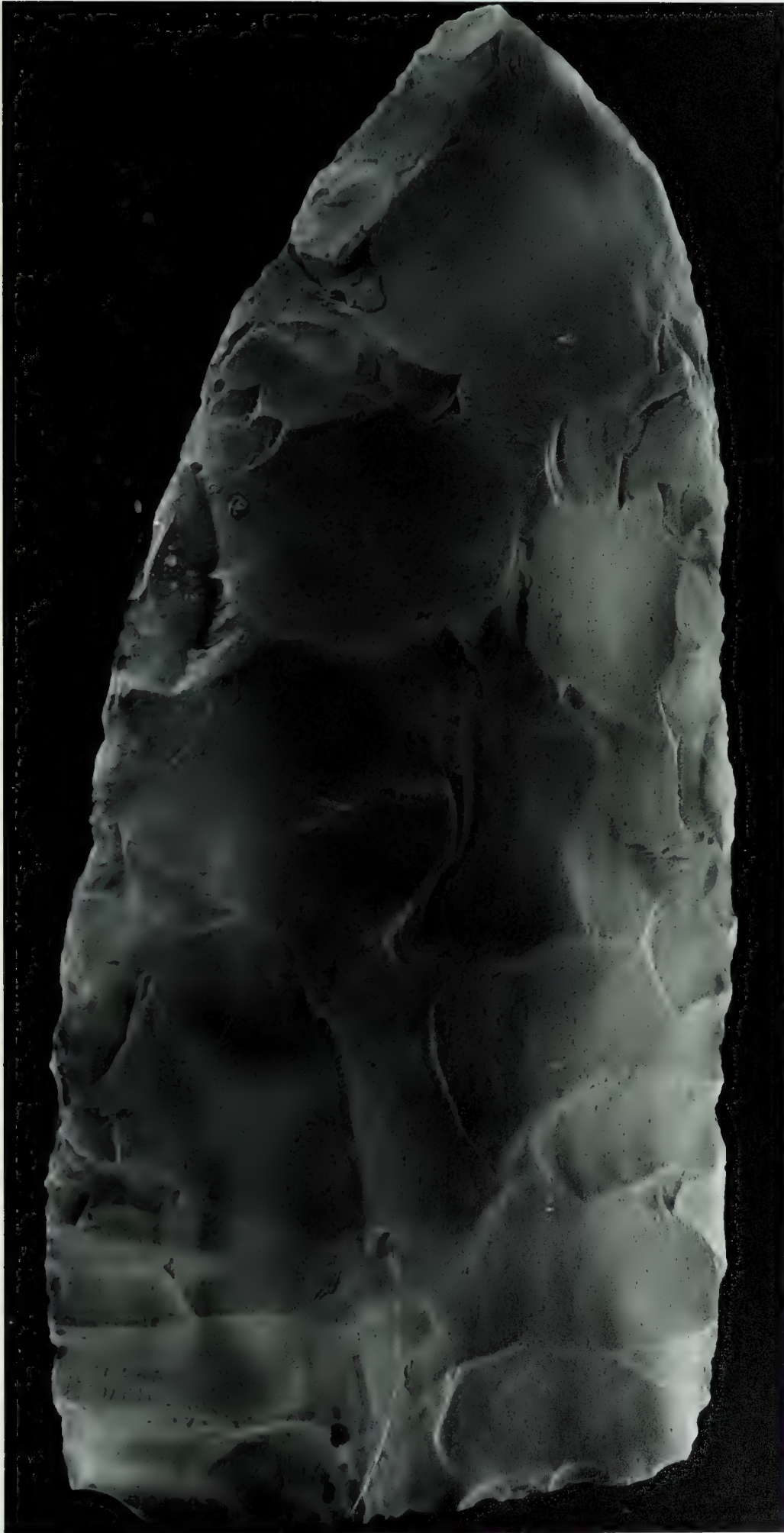


Plate 52. Prehistoric Artifact C01071, Obverse Face.





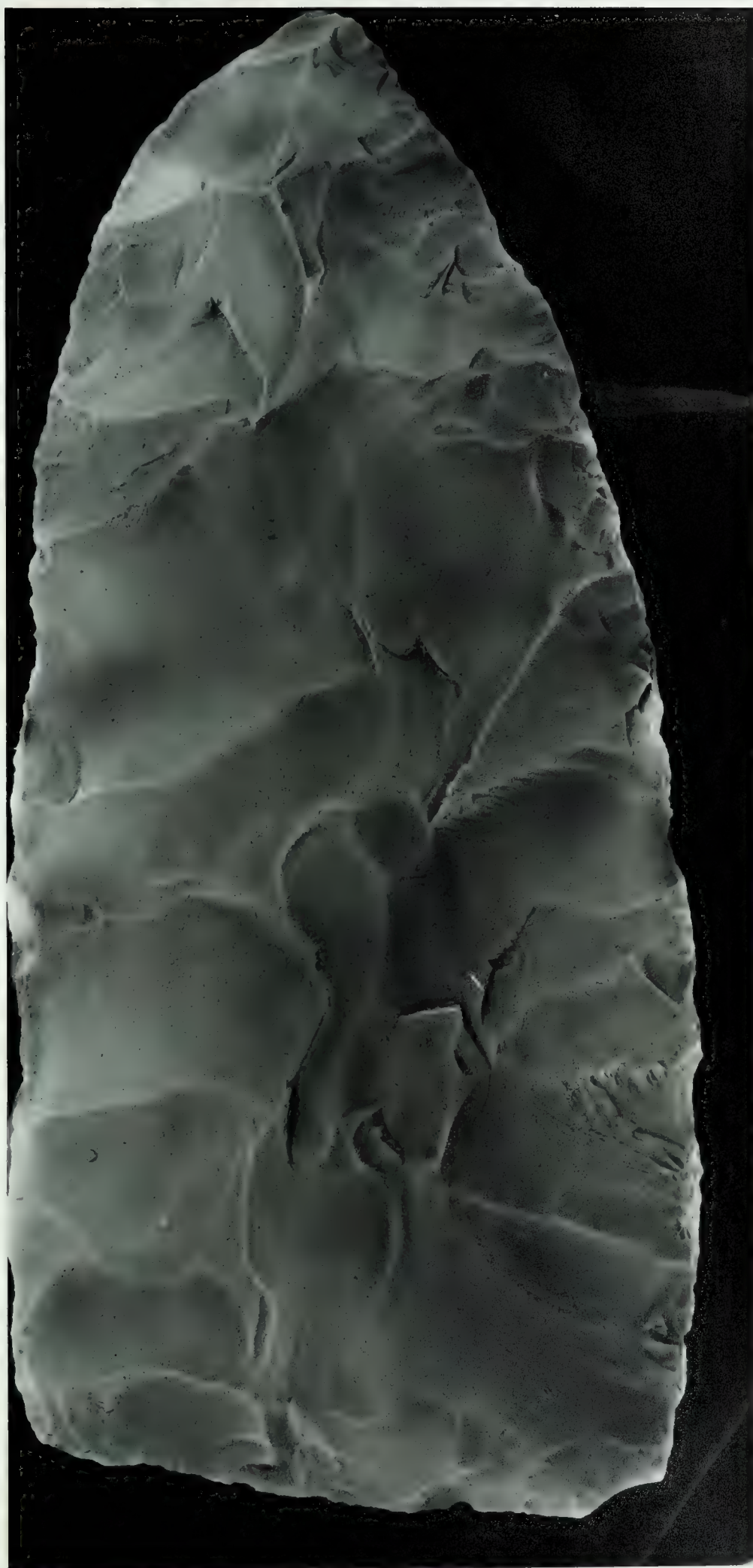


Plate 53. Prehistoric Artifact C01071, Reverse Face.





Table 64: Form for Coding and Interpreting  
Prehistoric Artifacts

1.0 Prehistoric Artifact Identification

1.1 Artifact Face: Obverse and Reverse

1.2 Prehistoric Specimen Provenience: DdGw-2 (Jessup Site)

1.3 Specimen Catalogue #: C02169

1.4 Photographic Plate Identification: Roll 3, B3, #17  
Roll 3, B3, #35

1.5 Standard Artifact Description:

1.6 Raw Material: Welded Tuff

1.7 Shape/Artifact Class: Biface

1.8 Flaking (Bifacial/Unifacial): Bifacial

1.9 Metric Size: length - 10.53  
width - 4.38  
thickness - 1.41

1.10 Form/Morphology Description:

This is a broad biface with a broad but shallow convex to straight base with rounded corners. The specimen snapped bilaterally during the finishing process near the proximal (tip) end of the specimen.



## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C02169	Main Flake Scar # 08	Edge Treatment on Same Scar	Notes
1.1 Scar Size	substantial	minimal (1)	1. Edge Unit 1 - see area covered on diagram, covers flake scars 7-11 obverse face, scars 30- 37 reverse face.
2.1 Edge Sharpness		sharp	
2.2 Margin Damage		heavy	
2.3 Microflakes		heavy	
2.4 Proximal Edge Morphology		straight with convex projections	
3.1 Negative Bulb of Force	indistinct		
3.2 Bulb to Scar Transition Angle	gradual		
3.3 Flake Thickness	thin		
4.1 Presence or Absence of Ribs	absent		
4.2 Distinctiveness of Ribs	n/a		
4.3 Rib Spacing And Distribution	n/a		
4.4 Tearing	0		
5.1 Scar Shape at Distal Edge	rounded	straight/ rounded	
5.2 Scar Termination at Distal Edge	step	pred. step	



2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar 08, C02169

	Prehistoric C02169 Scar 08	AB16-7(a) Sub. Perc. Thin Hammerstone	AB7-10 Sub. Perc. Thin Billet	AB11-11 Sub. Indirect Percussion
1.1	substantial	+ 1	+ 1	+ 1
2.1				
2.2				
2.3				
2.4				
3.1	indistinct	+ 1	+ 75 - 25	+ 66.6 - 33.3
3.2	gradual	+ 1	+ 75 - 25	+ 1
3.3	thin	+ 80 - 20	+ 50 - 50	+ 1
4.1	absent	+ 20 - 80	- 1	+ 66.7 - 33.3
4.2	n/a	n/a	n/a	n/a
4.3	n/a	n/a	n/a	n/a
4.4	0	+ 60 - 40	+ 75 - 25	+ 66.6 - 33.3



5.1	rounded	+ 40 - 60	+ 50 - 50	+ 33.3 - 66.7
5.2	step	+ 60 - 40	+ 75 - 25	- 1
Total	+	+ 5.6	+ 5.0	+ 5.33
	-	- 2.4	- 3.0	- 2.67
%	+	+ 80	+ 62.5	+ 67
	-	- 30	- 37.5	- 33
Score		+ 50	+ 25	+ 34

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Possible + 50 Identification - Sub. Percussion Thin with Hammerstone





2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar, C02169, Edge Unit 1

Prehistoric C02169 Edge Unit 1	AB6-13(a) Min. Shear Shape with P.F.	AB6-13(b) Mod. Shear Shape with P.F.	AB2-2(b) Min. Press. Rub with P.F.	AB14-16(b) Min. Perc. Shape with Hammerstone	AB15-18(b) Min. Perc. Shape Billet
1.1	minimal	+ 1	+ 1	+ 1	+ 1
2.1	sharp	+ 33.3 - 66.6	+ 1	+ 16.7 - 83.3	+ 1
2.2	heavy	- 1	+ 1	+ 1	+ 1
2.3	heavy	+ 66.6 - 33.4	+ 1	+ 1	+ 80 - 20
2.4	straight with convex project.	+ 1	+ 1	+ 84 - 16	+ 83.3 - 16.6
3.1					
3.2					
3.3					
4.1					
4.2					
4.3					
4.4					



5.1	straight/ rounded	+ 50 - 50	+ 44 - 56	+ 1	+ 1	+ 1
5.2	predominantly step	- 1	+ 22.3 - 77.7	+ 50 - 50	+ 33.3 - 66.6	+ 20 - 80
Total						
	+	+ 3.5	+ 5.66	+ 6.34	+ 4.33	+ 6
	-	- 3.5	- 1.34	- .66	- 2.67	- 1
%						
	+	+ 50	+ 81	+ 91	+ 62	+ 86
	-	- 50	- 19	- 9	- 38	- 14
Score						
		0	+ 62	+ 82	+ 24	+ 72

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

- \* (a) Highly Probable + 82 Minimum Pressure Rub with Pressure Flaker
- (b) Highly Probable + 72 Minimum Percussion Shape Billet
- (c) Possible + 62 Moderate Shear Shape with Pressure Flaker

\* selected unit



## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C02169	Main Flake Scar # 024	Edge Treatment on Same Scar	Notes
1.1 Scar Size	very sub.	(2)	1. This flake removal broke the specimen, therefore, the edge cannot be coded with certainty.  2. See scar # R14 for edge unit 2 treatment.
2.1 Edge Sharpness	sharp		
2.2 Margin Damage	n/a (1)		
2.3 Microflakes	n/a (1)		
2.4 Proximal Edge Morphology	n/a (1)		
3.1 Negative Bulb of Force	indistinct		
3.2 Bulb to Scar Transition Angle	gradual		
3.3 Flake Thickness	thin		
4.1 Presence or Absence of Ribs	present		
4.2 Distinctiveness of Ribs	indistinct		
4.3 Rib Spacing And Distribution	rel. far apart and evenly dist.		
4.4 Tearing	light		
5.1 Scar Shape at Distal Edge	irregular		
5.2 Scar Termination at Distal Edge	step		





2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar 024, C02169

Prehistoric C01083 Scar 024	AB7-10 Sub. Perc. Thin with Billet	AB8-6 Sub. Press. Thin with P.F.	AB16-7(a) Mod. Perc. Thin with Hammerstone
1.1 very sub.	+ 1	+ 1	+ 1
2.1 sharp	+ 1	+ 1	+ 1
2.2 n/a	n/a	n/a	n/a
2.3 n/a	n/a	n/a	n/a
2.4 n/a	n/a	n/a	n/a
3.1 indistinct	+ 75 - 25	+ 1	+ 1
3.2 gradual	+ 75 - 25	+ 1	+ 1
3.3 thin	+ 50 - 50	+ 1	+ 80 - 20
4.1 present	+ 50 - 50	+ 50 - 50	+ 80 - 20
4.2 indistinct	+ 1	+ 1	+ 1
4.3 far apart and evenly dist.	- 1	- 1	- 1
4.4 light	+ 25 - 75	+ 25 - 75	+ 40 - 60



5.1	irregular	+ 50 - 50	- 1	- 1
5.2	step	+ 75 - 25	+ 25 - 75	+ 60 - 40
	+	+ 7	+ 7	+ 8.6
Total	-	- 4	- 4	- 2.4
	+	+ 64	+ 64	+ 78
%	-	- 36	- 36	- 22
Score		+ 28	+ 28	+ 56

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

\* (a) Possible + 56 - Mod./Sub. Perc. Thin Hammerstone



## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C02169		Main Flake Scar # 027	Edge Treatment on Same Scar	Notes
1.1	Scar Size	very substantial	(1)	1. Edge Unit 2 scars not present. This edge was used as a platform. There are not enough codable attributes to make an identi- fication on this side of specimen (see scar R14).
2.1	Edge Sharpness			
2.2	Margin Damage			
2.3	Microflakes			
2.4	Proximal Edge Morphology			
3.1	Negative Bulb of Force	indistinct		
3.2	Bulb to Scar Transition Angle	gradual		
3.3	Flake Thickness	thin		
4.1	Presence or Absence of Ribs	present		
4.2	Distinctiveness of Ribs	indistinct		
4.3	Rib Spacing And Distribution	rel. far apart on dist. 1/2		
4.4	Tearing	heavy		
5.1	Scar Shape at Distal Edge	irregular		
5.2	Scar Termination at Distal Edge	feather and step		



## 2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar 027, C02169

Prehistoric C02169 Scar 027		AB7-10 Sub. Perc. Thin Billet	AB16-7(a) Mod./Sub. Perc. Thin Hammerstone
1.1	very substantial	+ 1	+ 1
2.1			
2.2			
2.3			
2.4			
3.1	indistinct	+ 75 - 25	+ 1
3.2	gradual	+ 75 - 25	+ 1
3.3	thin	+ 50 - 50	+ 80 - 20
4.1	present	+ 50 - 50	+ 80 - 20
4.2	indistinct	+ 50 - 50	+ 1
4.3	rel. far apart on distal 1/2	+ 1	- 1
4.4	heavy	- 1	- 1





5.1	irregular	+ 50 - 50	- 1
5.2	feather and step	+ 1	+ 1
	+	+ 7.0	+ 6.6
Total	-	- 3.0	- 3.4
	+	+ 70	+ 66
%	-	- 30	- 34
Score		+ 40	+ 32

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

N.B. Scar not useable. Upon re-examination, it appears to be comprised of two scars, not one. Not included in analysis.



## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C02169	Main Flake Scar # R14	Edge Treatment on Same Scar	Notes
1.1 Scar Size	substantial	minimal (1)	1. Edge Unit area 2. This coding covers scars 1-27, 38-40, reverse side and scars 1-6, 13-30 obverse side.
2.1 Edge Sharpness		sharp	
2.2 Margin Damage		light	
2.3 Microflakes		heavy	
2.4 Proximal Edge Morphology		straight with convex projections	
3.1 Negative Bulb of Force	indistinct		
3.2 Bulb to Scar Transition Angle	gradual		
3.3 Flake Thickness	thin		
4.1 Presence or Absence of Ribs	present		
4.2 Distinctiveness of Ribs	indistinct		
4.3 Rib Spacing And Distribution	rel. far apart and evenly dist.		
4.4 Tearing	light		
5.1 Scar Shape at Distal Edge	rounded	straight/ rounded	
5.2 Scar Termination at Distal Edge	feather/ step	mostly step some feather	



2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar R14, C02169

	Prehistoric C02169 Scar R14	AB7-10 Sub. Perc. Thin Billet	AB11-11 Sub. Indirect Percussion	AB16-7(a) Mod./Sub. Perc. Thin Hammerstone
1.1	substantial	+ 1	+ 1	+ 1
2.1				
2.2				
2.3				
2.4				
3.1	indistinct	+ 75 - 25	+ 66.7 - 33.3	+ 1
3.2	gradual	+ 75 - 25	+ 1	+ 1
3.3	thin	+ 50 - 50	+ 1	+ 80 - 20
4.1	present	+ 50 - 50	+ 33.3 - 66.7	+ 80 - 20
4.2	indistinct	+ 1	+ 1	+ 1
4.3	rel. far apart evenly dist.	+ 1	+ 1	+ 1
4.4	light	+ 25 - 75	+ 33.3 - 66.7	+ 40 - 60





5.1	rounded	+ 50 - 50	+ 33.3 - 66.7	+ 40 - 60
5.2	feather/step	+ 1	+ 50 - 50	+ 1
	+	+ 6.25	+ 7.2	+ 8.4
Total	-	- 3.75	- 2.8	- 1.6
	+	+ 63	+ 72	+ 84
%	-	- 37	- 28	- 16
Score		+ 26	+ 34	+ 60

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Possible + 60 - Mod./Sub. Percussion Thin Hammerstone



2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar, C02169, Edge Unit 2

	Prehistoric C02169 Edge Unit 2	AB6-13(a) Min. Shear Shape with P.F.	AB6-13(b) Mod. Shear Shape with P.F.	AB2-2(b) Min. Press. Rub with P.F.	AB14-16(b) Min. Perc. Shape with Hammerstone	AB13-18(b) Min. Perc. Shape with Billet
1.1	minimal	+ 1	+ 1	+ 1	+ 1	+ 1
2.1	sharp	+ 33.3 - 66.6	+ 1	+ 1	+ 1	+ 1
2.2	light	+ 16.7 - 83.3	- 1	- 1	- 1	- 1
2.3	heavy	+ 66.6 - 33.4	+ 1	+ 1	- 1	+ 80 - 20
2.4	straight with convex projections	+ 1	+ 1	+ 84 - 10	+ 33.3 - 66.7	+ 1
3.1						
3.2						
3.3						
4.1						
4.2						
4.3						
4.4						



5.1	straight/ rounded	+ 50 - 50	+ 44 - 56	+ 1	+ 33.3 - 66.6	+ 1
5.2	mostly step some feather	+ 50 - 50	+ 1	+ 1	+ 1	+ 1
	+	+ 4.2	+ 5.44	+ 5.84	+ 3.66	+ 5.8
Total	-	- 2.8	- 1.56	- 1.16	- 3.34	- 1.2
	+	+ 60	+ 78	+ 83	+ 52	+ 83
%	-	- 40	- 22	- 17	- 48	- 17
Score		+ 20	+ 56	+ 66	+ 4	+ 66

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Possible + 66 - Min. Press. Rub with P.F.

N.B.

Billet unit not selected as billet percussion work is not present elsewhere on specimen and the flakes removed are not shaping flakes.



## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C02169	Main Flake Scar #R24/28	Edge Treatment on Same Scar	Notes
1.1 Scar Size	minimal		
2.1 Edge Sharpness			
2.2 Margin Damage			
2.3 Microflakes			
2.4 Proximal Edge Morphology			
3.1 Negative Bulb of Force	indistinct		
3.2 Bulb to Scar Transition Angle	gradual		
3.3 Flake Thickness	thin		
4.1 Presence or Absence of Ribs	0		
4.2 Distinctiveness of Ribs	n/a		
4.3 Rib Spacing And Distribution	n/a		
4.4 Tearing	0		
5.1 Scar Shape at Distal Edge	straight & irregular		
5.2 Scar Termination at Distal Edge	feather & step		





2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar R24 to R28, C02169

	Prehistoric C02169 Scars R24-R28	AB9-5(b) Min. Press. Thin	AB5-9(a) Min. Perc. Thin Billet	AB16-7 Min. Perc. Thin Hammerstone
1.1	minimal	+ 1	+ 1	+ 1
2.1				
2.2				
2.3				
2.4				
3.1	indistinct	+ 1	+ 1	+ 1
3.2	gradual	+ 1	+ 1	+ 1
3.3	thin	+ 1	+ 88.9 - 11.1	+ 1
4.1	0	+ 77.8 - 22.2	+ 1	+ 1
4.2	n/a	n/a	n/a	n/a
4.3	n/a	n/a	n/a	n/a
4.4	0	+ 1	+ 88.9 - 11.1	+ 1



5.1	straight & irregular	+ 1	+ 66 - 34	+ 50 - 50
5.2	feather and step	+ 1	+ 1	+ 1
		+ 7.778	+ 7.438	+ 7.5
Total		- .222	- .562	- .5
		+ 97	+ 93	+ 94
%		- 3	- 7	- 6
Score		+ 94	+ 86	+ 88

### 2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Highly Probable + 94 - Min. Pressure Thin with Pressure Flaker



## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C02169		Main Flake Scar # R35	Edge Treatment on Same Scar	Notes
1.1	Scar Size	substantial	minimal (2)	1. Shaping units have removed most of percussion bulb or bulb area was used as a platform for removal on other side.
2.1	Edge Sharpness		sharp	
2.2	Margin Damage		0	
2.3	Microflakes		light	2. Edge Unit 1 (see scar 08 for details). Second coding of unit.
2.4	Proximal Edge Morphology		straight with convex proj.	
3.1	Negative Bulb of Force	n/a (1)		
3.2	Bulb to Scar Transition Angle	n/a		
3.3	Flake Thickness	thin		
4.1	Presence or Absence of Ribs	0		
4.2	Distinctiveness of Ribs	n/a		
4.3	Rib Spacing And Distribution	n/a		
4.4	Tearing	heavy		
5.1	Scar Shape at Distal Edge	rounded	straight and rounded	
5.2	Scar Termination at Distal Edge	feather	feather and step	





2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar R35, C02169

	Prehistoric C02169 Scar R35	AB7-10 Sub. Perc. Thin Billet	AB11-11 Very Sub. Indirect Perc.	AB16-7(a) Mod./Sub. Perc. Thin Hammerstone
1.1	substantial	+ 1	- 1	+ 1
2.1				
2.2				
2.3				
2.4				
3.1				
3.2				
3.3	thin	+ 50 - 50	+ 1	+ 80 - 20
4.1	0	+ 50 - 50	+ 66.6 - 33.3	+ 20 - 80
4.2	n/a	n/a	n/a	n/a
4.3	n/a	n/a	n/a	n/a
4.4	heavy	- 1	- 1	- 1



5.1	rounded	+ 50 - 50	+ 33.3 - 66.6	+ 40 - 60
5.2	feather	+ 25 - 75	- 1	+ 40 - 60
	+	+ 2.75	+ 2.9	+ 2.8
Total	-	- 3.25	- 3.1	- 3.2
	+	+ 46	+ 48.3	+ 47
%	-	- 54	- 51.7	- 53
Score		- 8	- 3.4	- 6

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

All indeterminate - unable to identify, not enough codable attributes (only 6 out of 14 codable).  
illustrates the difficulty of coding partial scars and overlapped scars.



2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar, C02169, Edge Unit 1

	Prehistoric C02169 Edge Unit 1	AB6-13(a)		AB6-13(b)		AB2-2(b)		AB14-16(b)		AB15-18(b)	
		Min. Shear	Shape	Mod. Shear	Shape with P.F.	Min. Press.	Rub with P.F.	Min. Press.	Shape with Hammerstone	Min. Perc.	Shape/Billet
1.1	minimal	+ 1		+ 1		+ 1		+ 1		+ 1	
2.1	sharp	+ 33.3 - 66.6		+ 1		+ 1		+ 16.7 - 83.3		+ 1	
2.2	0	+ 83.3 - 16.7		- 1		- 1		- 1		- 1	
2.3	light	+ 16.7 - 83.35		- 1		- 1		- 1		- 1	
2.4	straight with convex projections	+ 1		+ 1		+ 84 - 16		83.3 - 16.6		+ 1	
3.1											
3.2											
3.3											
4.1											
4.2											
4.3											
4.4											



5.1	straight and rounded	+ 50 - 50	+ 34 - 66	+ 1	+ 1	+ 1
5.2	feather and step	+ 50 - 50	+ 1	+ 1	+ 1	+ 1
Total						
+		+ 4.33	+ 4.34	+ 4.84	+ 4	+ 5
-		- 2.67	- 2.66	- 2.16	- 3	- 2
+		+ 62	+ 62	+ 69	+ 57	+ 71
-		- 38	- 38	- 31	- 43	- 29
Score		+ 24	+ 24	+ 38	+ 14	+ 42

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

\* Possible + 38 - Min. Press. Rub with P.F.

\* selected unit, as this is the same as edge unit #1.





## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C02169	Main Flake Scar # R37	Edge Treatment on Same Scar	Notes
1.1 Scar Size	substantial	(1)	1. No Edge Unit.
2.1 Edge Sharpness	sharp		
2.2 Margin Damage	0		
2.3 Microflakes	light		
2.4 Proximal Edge Morphology	flat curved notch		
3.1 Negative Bulb of Force	distinct		
3.2 Bulb to Scar Transition Angle	gradual		
3.3 Flake Thickness	thin		
4.1 Presence or Absence of Ribs	0		
4.2 Distinctiveness of Ribs	n/a		
4.3 Rib Spacing And Distribution	n/a		
4.4 Tearing	0		
5.1 Scar Shape at Distal Edge	rounded		
5.2 Scar Termination at Distal Edge	step/ feather		



2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar R37, C02169

	Prehistoric C02169 Scar R37	AB7-10		AB16-7(a)		AB8-6	
		Sub. Perc. Thin Billet		Mod./Sub. Perc. Thin Hammerstone		Sub. Pressure Thin with P.F.	
1.1	substantial	+ 1		+ 1		+ 1	
2.1	sharp	+ 1		+ 1		+ 1	
2.2	0	+ 50 - 50		+ 1		+ 50 - 50	
2.3	light	- 1		+ 40 - 60		- 1	
2.4	flat curved notch	+ 75 - 25		+ 1		- 1	
3.1	distinct	+ 25 - 75		- 1		- 1	
3.2	gradual	+ 75 - 25		+ 1		+ 1	
3.3	thin	+ 50 - 50		+ 80 - 20		+ 1	
4.1	0	+ 50 - 50		+ 20 - 80		+ 50 - 50	
4.2	n/a	n/a		n/a		n/a	
4.3	n/a	n/a		n/a		n/a	
4.4	0	+ 75 - 25		+ 60 - 40		+ 75 - 25	



5.1	rounded	+ 50 - 50	+ 40 - 60	+ 75 - 25
5.2	step/ feather	+ 1	+ 1	+ 1
Total	+	+ 7.5	+ 8.4	+ 7.5
	-	- 4.5	- 3.6	- 4.5
%	+	+ 63	+ 70	+ 63
	-	- 37	- 30	- 37
Score		+ 26	+ 40	+ 26

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Possible + 40 - Mod./Sub. Perc. Thin Hammerstone





2.4 Summary of Behavior Units (Morpho-Units) Identified on Artifact, C02169

Main Scar #	Edge Unit Scar #	Rating on Scoring Scale	Final +/- Score	Behavior Unit	Experimental Control Specimen
08			+ 50	Mod./Sub. Perc. Thin, Hammerstone	AB16-7(a)
	Edge Unit 1	Highly Probable	+ 82	Minimum Pressure Rub with P.F.	AB2-2(b)
024		Possible	+ 56	Moderate to Substantial Percussion Thin, Hammerstone	AB16-7(a)
027		n/a		scar not usable (attributes from two overlapping scars present)	n/a
R14		Possible	+ 60	Mod./Sub. Perc. Thin Hammerstone	AB16-7(a)
	Edge Unit 2	Possible	+ 66	Min. Press. Rub with P.F.	AB2-2(b)
R24 to R28		Highly Probable	+ 94	Min. Pressure Thin with Pressure Flaker	AB9-5(b)
R35		n/a	n/a	as only 6 of 14 attributes are codable, there are too few for scar identification	n/a
	Edge Unit 1	Possible	+ 38	Min. Pressure Rub with P.F.	AB2-2(b)
R37		Possible	+ 40	Mod./Sub. Perc. Thin with Hammerstone	AB16-7(a)



### 3.0 Interpretation of Behavior (Technological) Units

#### (a) Transforming Behavior Units into Production Units:

#### 3.1 Function of Percussion Thinning/Shaping Units (moderate to very substantial size scars on specimen)

- (a) Moderate and Substantial Percussion Thin with Hammerstone: This behavior unit resulted in face paring (biface thinning flakes) or substantial thinning of the artifact. Production Unit Code is 40:4, 51, 41.

#### 3.2 Function of Pressure Thinning/Shaping Units (minimal to substantial size scars on specimen)

- (a) Minimum Pressure Thinning with Pressure Flaker: This unit was identified for some small scars on the base (R24 to R28) and on the tip of the artifact. It was used for margin regularizing (removing inter-flake scar ridges) and margin contouring (increasing the edge angle to make a bifacial edge). Production Unit Code is 30/31:2, 31, 31.

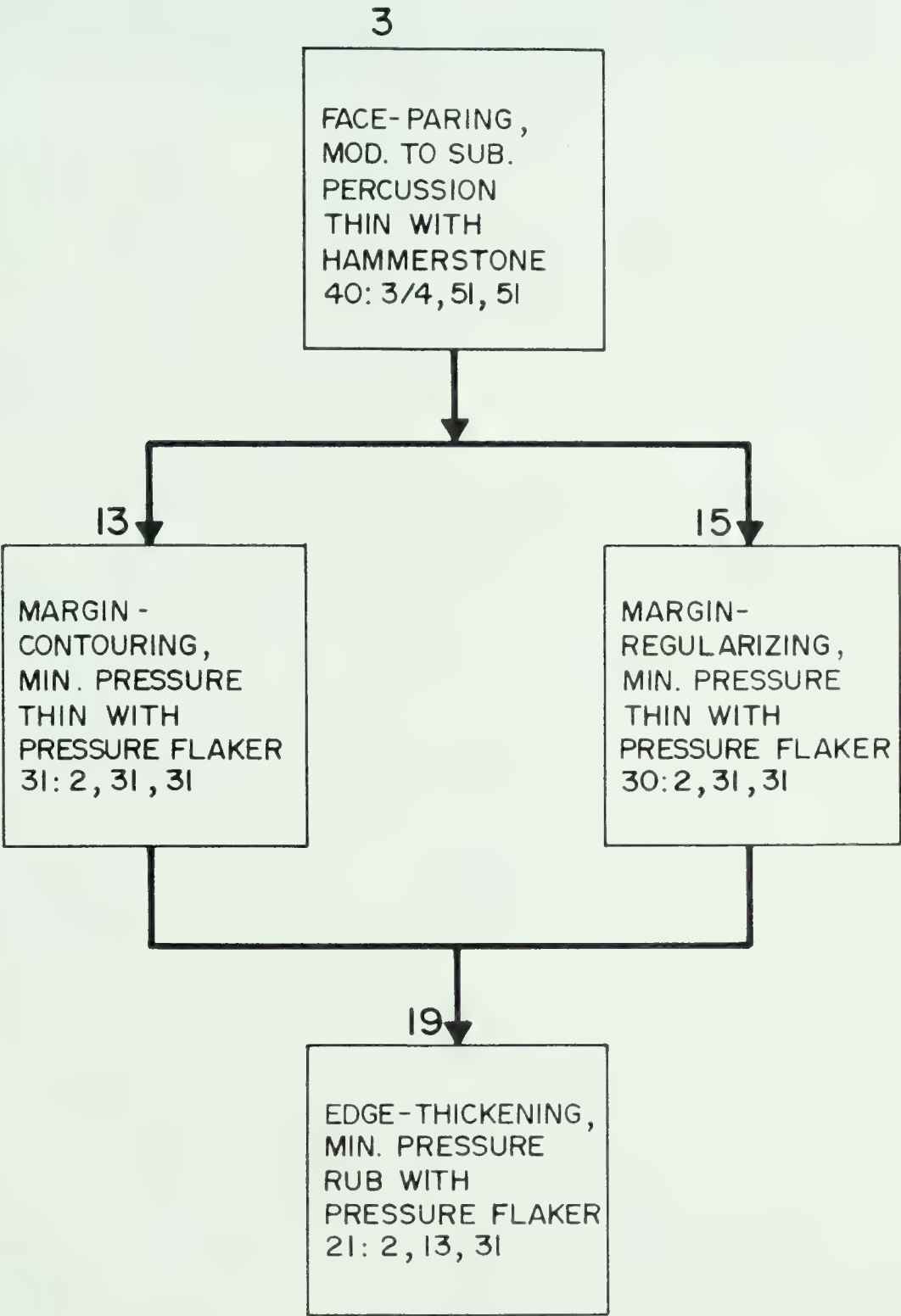
#### 3.3 Function of Edge Units (minimal to very minimal size scars on specimen)

Only one edge unit is apparent from the analysis being a minimal pressure rub with a pressure flaker. This removes or blunts an overly thin edge to allow it to be used as a platform. Some "scaloped flakes," many with tiny platofrms, are removed from the artifact face at the same time (see experiment AB2-2(b) for size and type of flake removal). Production Unit Code is 21:2, 13, 31.



(b) Reconstructing Sequencing of Production Units: C02169

3.4 Flow Diagram of Production Units (below)





### 3.5 Description and Discussion of Technological Grammar Found on Artifact

This biface was produced by use of moderate and substantial hammerstone thinning flakes. After the substantial thinning the edge was thickened and strengthened by applying the edge of a pressure flaker. This also removed some small thinning flakes. Margin contouring and margin regularizing was accomplished through the use of moderate pressure thinning flakes, especially at the base and tip of the specimen.





DdGw-2 — CO 2169

OBVERSE FACE

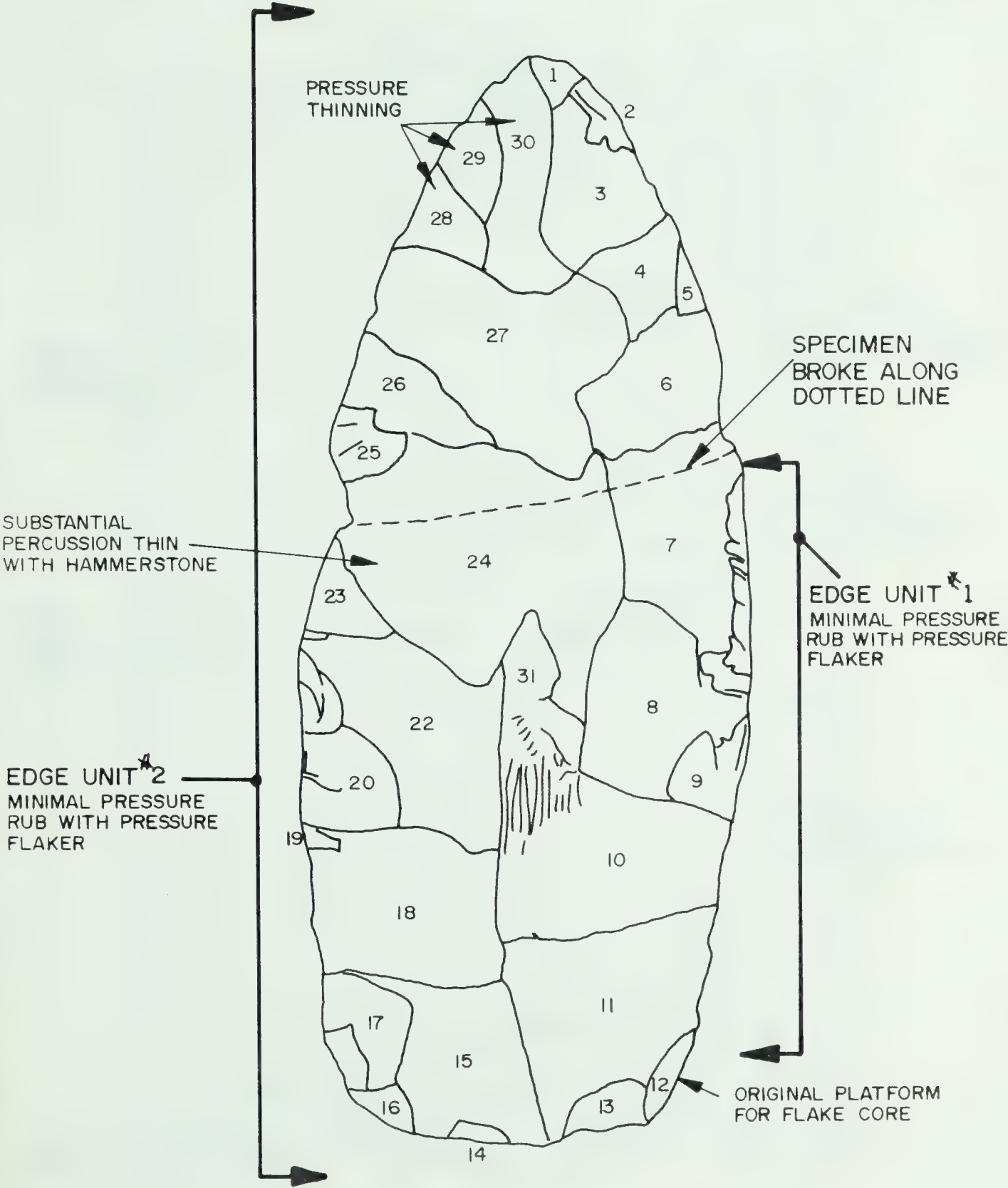


FIGURE 44



DdGw-2 ————— CO 2169

REVERSE FACE

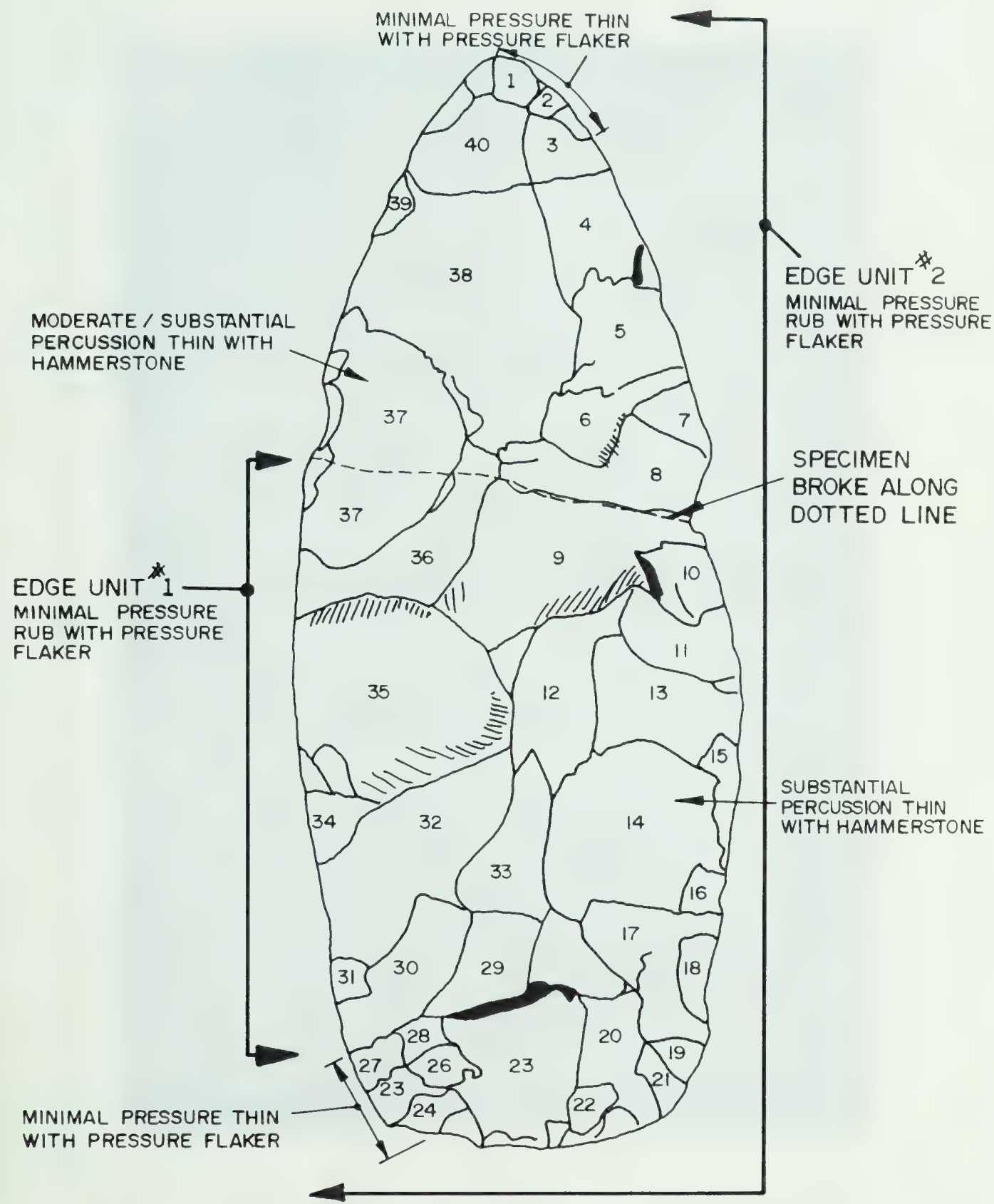


FIGURE 45



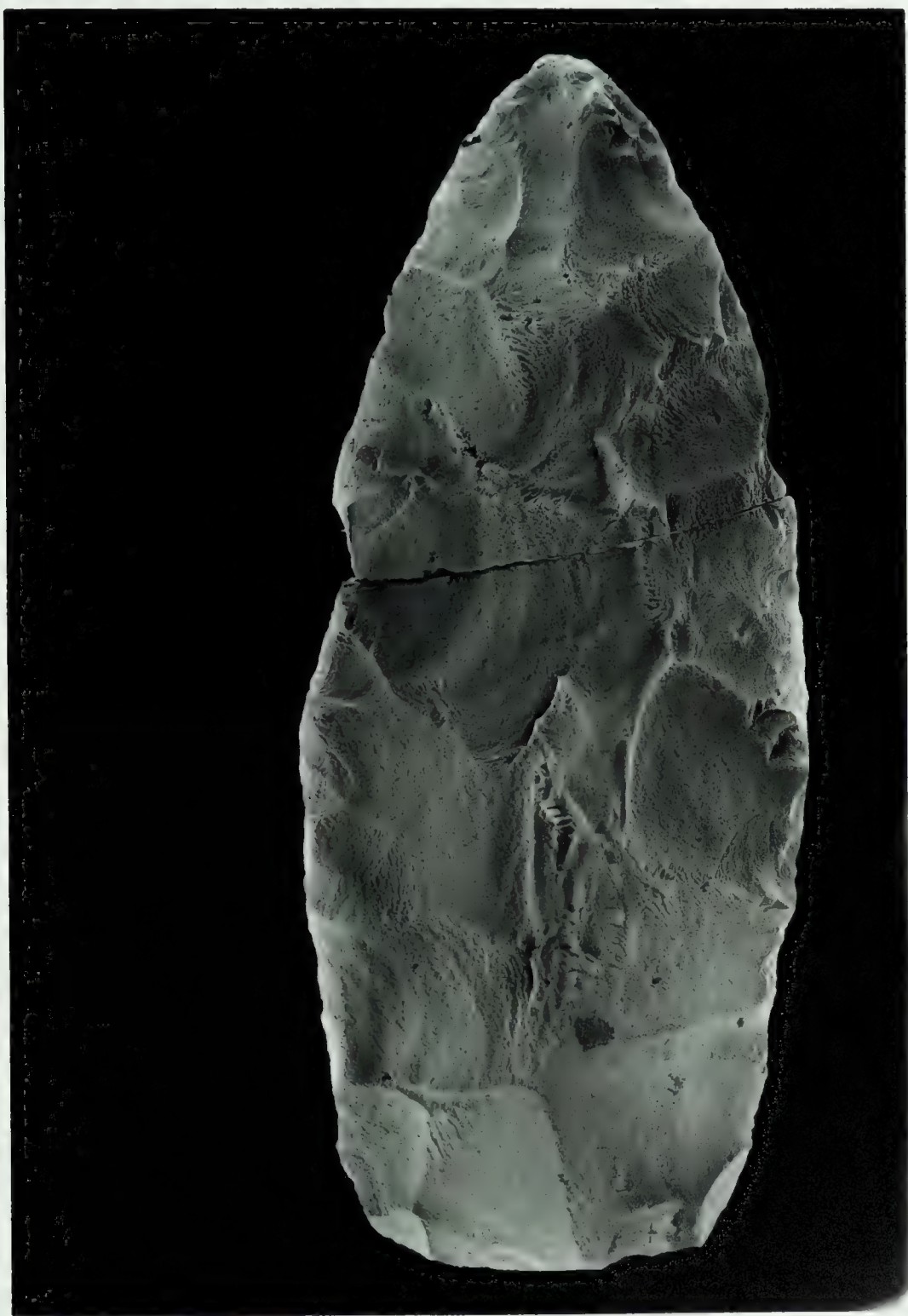


Plate 54: Prehistoric Artifact C02169, Obverse Face.







Plate 55: Prehistoric Artifact C02169, Reverse Face.



Table 65: Form for Coding and Interpreting  
Prehistoric Artifacts

1.0 Prehistoric Artifact Identification

1.1 Artifact Face: Obverse and Reverse

1.2 Prehistoric Specimen Provenience: DdGw-2

1.3 Specimen Catalogue #: C02357

1.4 Photographic Plate Identification: Roll 3, B3, #13  
Roll 4, B4, #9

1.5 Standard Artifact Description:

1.6 Raw Material: Welded Tuff

1.7 Shape/Artifact Class: Biface

1.8 Flaking (Bifacial/Unifacial):

1.9 Metric Size: length - 10.78 cm  
width - 3.66 cm  
thickness - 1.30 cm

1.10 Form/Morphology Description:

This artifact represents a biface manufactured from a flake core. One side of the specimen has extensive step fracturing, while the other side is unretouched, original flake core surface.

The base is slightly rounded (convex) and has numerous thinning flakes.



## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C02537	Main Flake Scar # 04	Edge Treatment on Same Scar	Notes
1.1 Scar Size	substantial	minimal (1) to moderate	1. Edge Unit 1 - there is extensive edge treatment on one lateral edge of this specimen. The other has none as the notches from percussion flaking are still present and there are many convex projections between scars.
2.1 Edge Sharpness	sharp (2)	predominantly sharp	
2.2 Margin Damage	0	heavy	
2.3 Microflakes	0	light	
2.4 Proximal Edge Morphology	flat curved notch	shallow curved notches	2. Platform intact for coding.
3.1 Negative Bulb of Force	indistinct		
3.2 Bulb to Scar Transition Angle	gradual		
3.3 Flake Thickness	thin		3. Has been truncated by another scar.
4.1 Presence or Absence of Ribs	0		
4.2 Distinctiveness of Ribs	0		
4.3 Rib Spacing And Distribution	0		
4.4 Tearing	0		
5.1 Scar Shape at Distal Edge	n/a (3)	straight & irregular	
5.2 Scar Termination at Distal Edge	n/a	feather and step	





2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar 04, C02537

Prehistoric C02537 Scar 04	AB7-10 Sub. Perc. Thin Billet	AB11-11 Sub. Indirect Perc.	AB16-17(a) Mod./Sub. Perc. Thin Hammerstone
1.1	substantial	+ 1	+ 1
2.1	sharp	+ 1	+ 1
2.2	absent	+ 50 - 50	+ 66.7 - 33.3
2.3	0	+ 1	+ 33.3 - 66.7
2.4	flat curved notch	+ 75 - 25	+ 1
3.1	indistinct	+ 75 - 25	+ 66.7 - 33.3
3.2	gradual	+ 75 - 25	+ 1
3.3	thin	+ 50 - 50	+ 1
4.1	0	+ 50 - 50	+ 66.7 - 33.3
4.2	n/a	n/a	n/a
4.3	n/a	n/a	n/a
4.4	0	+ 75 - 25	+ 66.7 - 33.3





5.1	n/a	n/a	n/a	n/a
5.2	n/a	n/a	n/a	n/a
Total	+	+ 7.5	+ 7.67	+ 8.2
	-	- 2.5	- 2.33	- 1.8
%	+	+ 75	+ 86	+ 82
	-	- 25	- 20	- 18
Score		+ 50	+ 60	+ 64

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Possible + 64 Mod./Sub. Perc. Thin Hammerstone



2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar, C02537, Edge Unit 1 (Scar 04 form)

Prehistoric C02537 Edge Unit 1	AB2-2(b) Min. Press. Rub P.F.	AB6-13(b) Mod./Sub. Shear Shape P.F.	AB16-7(b) Min. Perc. Thin Hammerstone	AB5-9(a) Min. Perc. Thin Billet	AB15-18(a) Mod. Perc. Shape Billet
1.1 minimal to mod.	+ 1	+ 1	+ 1	+ 1	- 1
2.1 predominantly sharp	+ 1	+ 1	+ 1	+ 1	+ 1
2.2 heavy	+ 1	+ 1	+ 66 - 34	+ 1	+ 42.86 - 57.15
2.3 light	- 1	- 1	- 1	- 1	+ 28.6 - 71.4
2.4 follows existing edge	+ 1	+ 1	+ 1	+ 1	+ 1
3.1					
3.2					
3.3					
4.1					
4.2					
4.3					
4.4					



5.1	straight & irregular	+ 50 - 50	+ 1	+ 50 - 50	+ 66 - 34	+ 57.1 - 42.9
5.2	feather & step	+ 1	+ 1	+ 1	+ 1	+ 1
Total						
+		+ 5.5	+ 6	+ 5.2	+ 5.6	+ 4.3
-		- 1.5	- 1	- 1.8	- 1.4	- 2.7
%						
+		+ 79	+ 86	+ 74	+ 80	+ 61
-		- 21	- 14	- 26	- 20	- 39
Score						
		+ 58	+ 72	+ 48	+ 60	+ 22

### 2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Highly Probable + 72 - Mod./Substantial Shear Shape with Pressure Flaker





## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C02537	Main Flake Scar # 018	Edge Treatment on Same Scar	Notes
1.1 Scar Size	moderate	(1)	1. Coded on scar 04.
2.1 Edge Sharpness	sharp (2)		2. Platform intact enough for coding.
2.2 Margin Damage	0		
2.3 Microflakes	light		
2.4 Proximal Edge Morphology	flat curved notch		
3.1 Negative Bulb of Force	indistinct		
3.2 Bulb to Scar Transition Angle	gradual		
3.3 Flake Thickness	thin		
4.1 Presence or Absence of Ribs	present		
4.2 Distinctiveness of Ribs	indistinct		
4.3 Rib Spacing And Distribution	rel. far apart and evenly dist.		
4.4 Tearing	0		
5.1 Scar Shape at Distal Edge	rounded		
5.2 Scar Termination at Distal Edge	step		



2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar 018, C02537

	Prehistoric C02537 Scar 018	AB16-7(a)		AB5-9(a)		AB8-6	
		Mod./Sub. Perc. Thin Hammerstone		Mod. Perc. Thin Billet		Sub. Press. Thin with P.F.	
1.1	moderate	+ 1		+ 1		+ 1	
2.1	sharp	+ 1		+ 1		+ 1	
2.2	0	+ 1		+ 60 - 40		+ 50 - 50	
2.3	light	+ 40 - 60		+ 40 - 60		- 1	
2.4	flat curved notch	+ 1		+ 1		- 1	
3.1	indistinct	+ 1		+ 80 - 20		+ 1	
3.2	gradual	+ 1		+ 80 - 20		+ 1	
3.3	thin	+ 80 - 20		+ 80 - 20		+ 1	
4.1	present	+ 80 - 20		+ 20 - 80		+ 50 - 50	
4.2	indistinct	+ 1		+ 1		+ 1	
4.3	rel. far apart evenly dist.	+ 1		- 1		- 1	
4.4	0	+ 60 - 40		+ 80 - 20		+ 75 - 25	



5.1	rounded	+ 40 - 60	+ 40 - 60	+ 75 - 25
5.2	step	+ 60 - 40	+ 50 - 50	+ 25 - 75
Total	+	+ 11.6	+ 9.3	+ 8.75
	-	- 2.4	- 4.7	- 5.25
%	+	+ 83	+ 66	+ 63
	-	- 17	- 34	- 37
Score		+ 66	+ 34	+ 26

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Possible + 66 - Mod./Sub. Perc. Thin Hammerstone



## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C02537	Main Flake Scar # R8	Edge Treatment on Same Scar	Notes
1.1 Scar Size	moderate	(1)	1. See scar 04
2.1 Edge Sharpness	sharp		
2.2 Margin Damage	0		
2.3 Microflakes	0		
2.4 Proximal Edge Morphology	flat curved notch		
3.1 Negative Bulb of Force	very indistinct		
3.2 Bulb to Scar Transition Angle	gradual		
3.3 Flake Thickness	thin		
4.1 Presence or Absence of Ribs	0		
4.2 Distinctiveness of Ribs	n/a		
4.3 Rib Spacing And Distribution	n/a		
4.4 Tearing	0		
5.1 Scar Shape at Distal Edge	straight		
5.2 Scar Termination at Distal Edge	step		





## 2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar R8, C02537

	Prehistoric C02537 Scar R8	AB16-7(a)		AB5-9(b)		AB8-6	
		Mod./Sub. Thin Hammerstone	Perc. Thin Billet	Mod. Perc. Thin Billet	Sub. Press. Thin P.F.		
1.1	moderate	+ 1		+ 1		+ 1	
2.1	sharp	+ 1		+ 1		+ 1	
2.2	0	+ 1		+ 40 - 60		+ 50 - 50	
2.3	0	+ 60 - 40		+ 60 - 40		+ 1	
2.4	flat curved notch	+ 1		+ 1		- 1	
3.1	very indistinct	+ 1		+ 80 - 20		+ 1	
3.2	gradual	+ 1		+ 80 - 20		+ 1	
3.3	thin	+ 80 - 20		+ 80 - 20		+ 1	
4.1	0	+ 20 - 80		+ 80 - 20		+ 50 - 50	
4.2	n/a	n/a		n/a		n/a	
4.3	n/a	n/a		n/a		n/a	
4.4	0	+ 60 - 40		+ 80 - 20		+ 75 - 25	



5.1	straight	+ 60 - 40	+ 60 - 40	+ 25 - 75
5.2	step	+ 60 - 40	+ 50 - 50	+ 25 - 75
Total	+	+ 9.4	+ 9.1	+ 8.25
	-	- 2.6	- 2.9	- 3.75
%	+	+ 78	+ 76	+ 69
	-	- 22	- 24	- 31
Score		+ 56	+ 52	+ 38

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Possible + 56 - Mod./Sub. Perc. Thin Hammerstone



## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C02537		Main Flake Scar # R10	Edge Treatment on Same Scar	Notes
1.1	Scar Size	substantial	(1)	1. See scar 04
2.1	Edge Sharpness	sharp		
2.2	Margin Damage	light		
2.3	Microflakes	0		
2.4	Proximal Edge Morphology	flat curved notch		
3.1	Negative Bulb of Force	indistinct		
3.2	Bulb to Scar Transition Angle	gradual		
3.3	Flake Thickness	thin		
4.1	Presence or Absence of Ribs	0		
4.2	Distinctiveness of Ribs	n/a		
4.3	Rib Spacing And Distribution	n/a		
4.4	Tearing	0		
5.1	Scar Shape at Distal Edge	straight		
5.2	Scar Termination at Distal Edge	step		





## 2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar R10

	Prehistoric C02537 Scar R10	AB7-10		AB11-11		AB16-17(a)	
		Sub. Perc.	Thin Billet	Sub. Indirect Perc.	Mod./Sub. Perc.	Thin Hammerstone	
1.1	substantial	+ 1		+ 1		+ 1	
2.1	sharp	+ 1		+ 1		+ 1	
2.2	light	+ 50 - 50		+ 33.3 - 66.7		- 1	
2.3	0	+ 1		+ 33.3 - 66.7		+ 60 - 40	
2.4	flat curved notch	+ 75 - 25		+ 1		+ 1	
3.1	indistinct	+ 75 - 25		+ 66.7 - 33.3		+ 1	
3.2	gradual	+ 75 - 25		+ 1		+ 1	
3.3	thin	+ 50 - 50		+ 1		+ 80 - 20	
4.1	0	+ 50 - 50		+ 66.7 - 33.3		+ 20 - 80	
4.2	n/a	n/a		n/a		n/a	
4.3	n/a	n/a		n/a		n/a	
4.4	0	+ 75 - 25		+ 66.7 - 33.3		+ 60 - 40	



5.1	straight	- 1	- 1	+ 60 - 40
5.2	step	+ 75 - 25	- 1	+ 60 - 40
	+	+ 8.25	+ 7.67	+ 8.4
Total	-	- 3.75	- 4.33	- 3.6
	+	+ 69	+ 64	+ 70
%	-	- 31	- 36	- 30
Score		+ 38	+ 28	+ 40

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Possible + 40 - Mod./Sub. Perc. Thin Hammerstone

The absence of any distinct percussion bulb and the flatness of the flake also support a hammerstone identification.



## 2.4 Summary of Behavior Units (Morpho-Units) Identified on Artifact, C02357 (Jessup)

Main Scar #	Edge Unit Scar #	Rating on Scoring Scale	Final +/- Score	Behavior Unit	Experimental Control Specimen
04		Possible	+ 64	Mod./Sub. Perc. Thin Hammerstone	AB16-7(a)
	Edge Unit # 1	Highly Probable	+ 72	Moderate/Substantial Shear Shape with Pressure Flaker	AB6-13(b)
018		Possible	+ 66	Mod./Sub. Perc. Thin Hammerstone	AB16-7(a)
R8		Possible	+ 56	Mod./Sub. Perc. Thin Hammerstone	AB16-7(a)
R10		Possible	+ 40	Mod./Sub. Perc. Thin Hammerstone	AB16-7(a)



### 3.0 Interpretation of Behavior (Technological) Units

#### (a) Transforming Behavior Units into Production Units:

### 3.1 Function of Percussion Thinning/Shaping Units (moderate to very substantial size scars on specimen)

- (a) Moderate and Substantial Percussion Thin with Hammerstone: Percussion thinning removes face paring flakes which are at least two times longer than the platform at the artifact edge, thinning the specimen much faster than the contour or outline shape is altered. Production Unit Codes for these behavior units are substantial - 40:4, 41, 41; moderate - 40:3, 41, 41.
- (b) Because this specimen is made from a flake, another function of the hammerstone thinning was to contour the margin by removing thin flakes near the margin to increase the edge angle and produce a bifacial edge. Production Unit Code is 31:3/4, 41, 41.

### 3.2 Function of Pressure Thinning/Shaping Units (minimal to substantial size scars on specimen)

There are no pressure flake scars on the specimen although some flakes look like pressure. These appear to be multiple flake removals from a single blow (as discerned from the platform size and position). Their thinness and small size makes them resemble minimum pressure flakes.

### 3.3 Function of Edge Units (minimal to very minimal size scars on specimen)

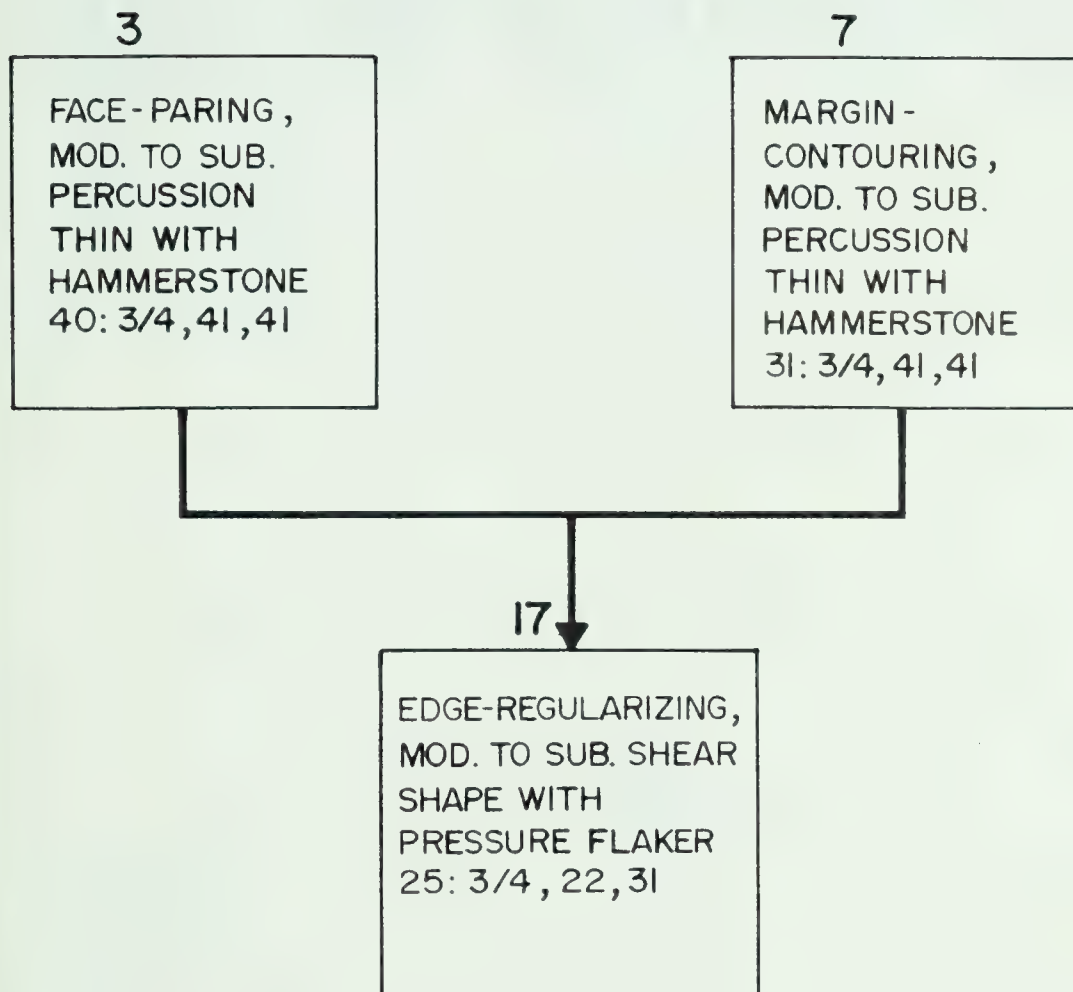
Only one edge unit (unit #1) was identified as moderate to substantial shear shaping with the side and tip of a pressure flaker. Shearing which involves placing the side of the pressure flaker against the edge and moving it diagonally (or in some cases perpendicularly) along the edge producing an irregular surface topography of overlapping scars and platforms in which individual scar outlines are obscure. This production unit serves to center, straighten and regularize the edge all in one operation. Production Unit Code is 23/24/25:3/4, 22, 31.





(b) Reconstructing Sequencing of Production Units: C02357

3.4 Flow Diagram of Production Units (below)





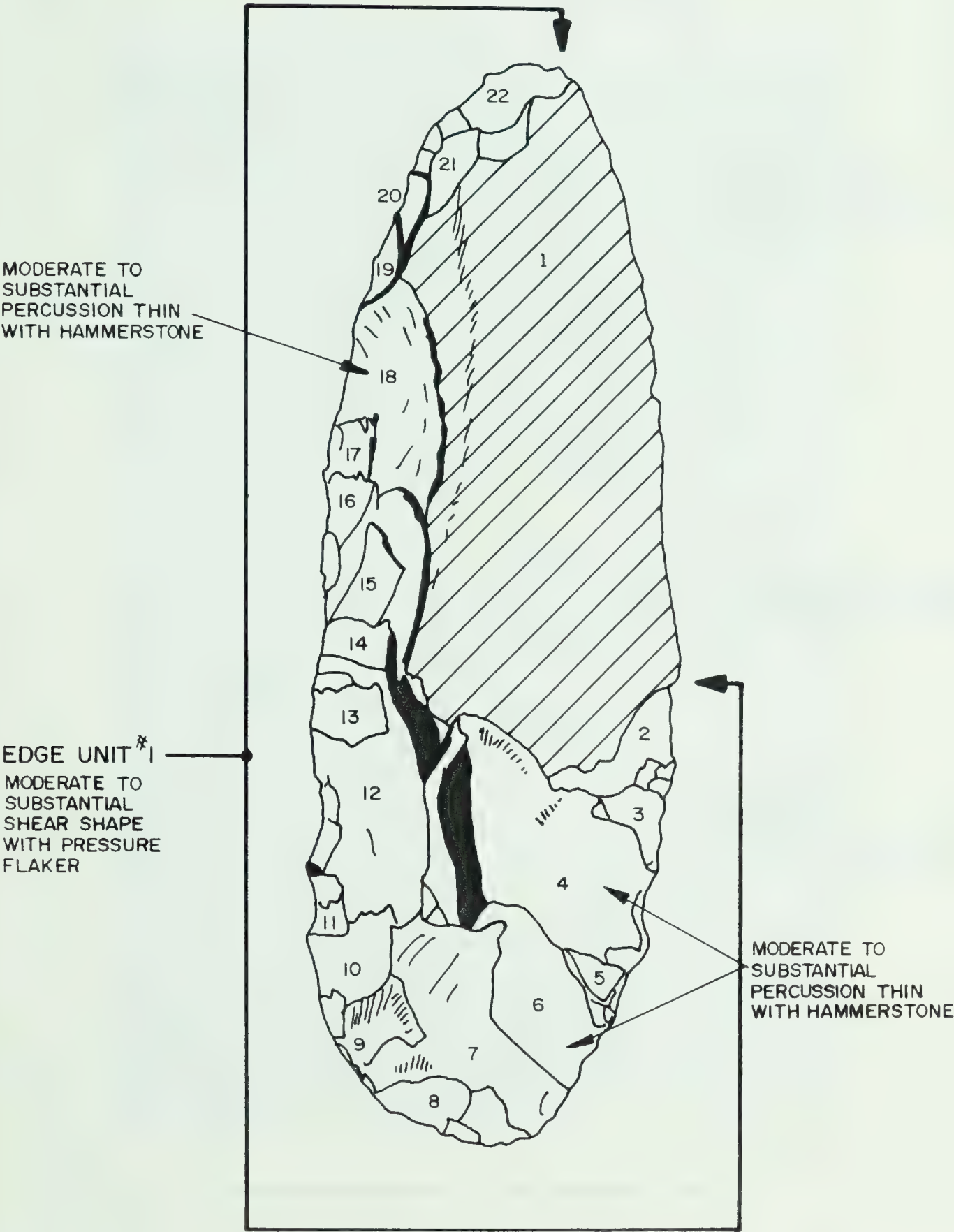
### 3.5 Description and Discussion of Technological Grammar Found on Artifact

This biface preform is manufactured from a large flake core substantial remnants of which remain on both the obverse (scar 01) and reverse faces (scar R20). The bifacial edge on the flake core was produced by moderate and substantial percussion thinning with a hammerstone which also contoured the margin. Subsequently, the side of an antler pressure flaker was used to shear shape the edge and resulted in centering, straightening and regularizing the margin. Some flakes were also removed during this process [as demonstrated in Experiment AB6-13(b)]. This has regularized or straightened the margin by slightly smoothing over some of the flat curved notches left from the percussion flaking.



DdGw-2 ————— CO 2357

OBVERSE FACE



0 5 10 20 mm

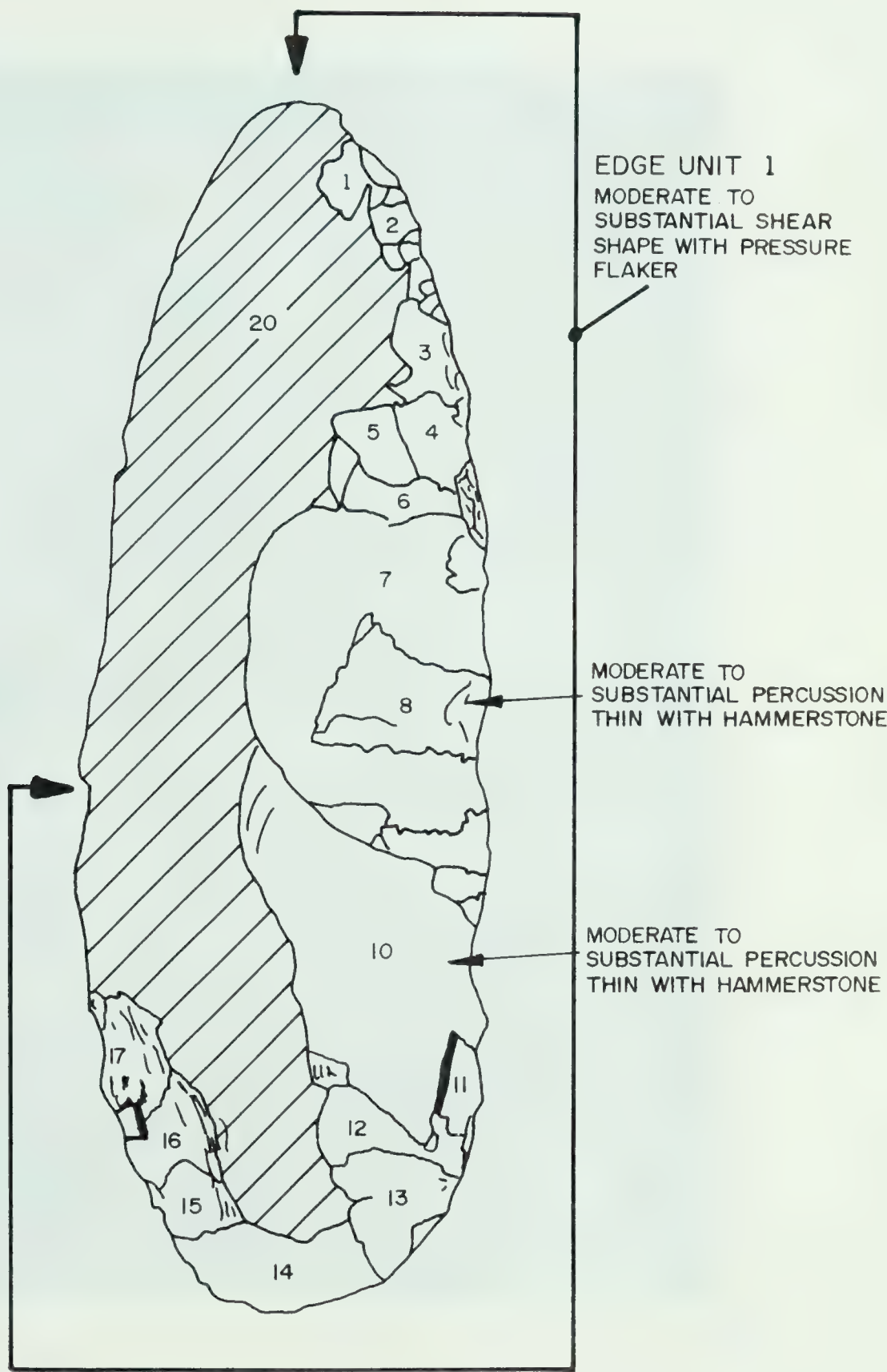
FIGURE 46





DdGw-2 ————— CO 2357

REVERSE FACE



0 5 10 20mm

FIGURE 47



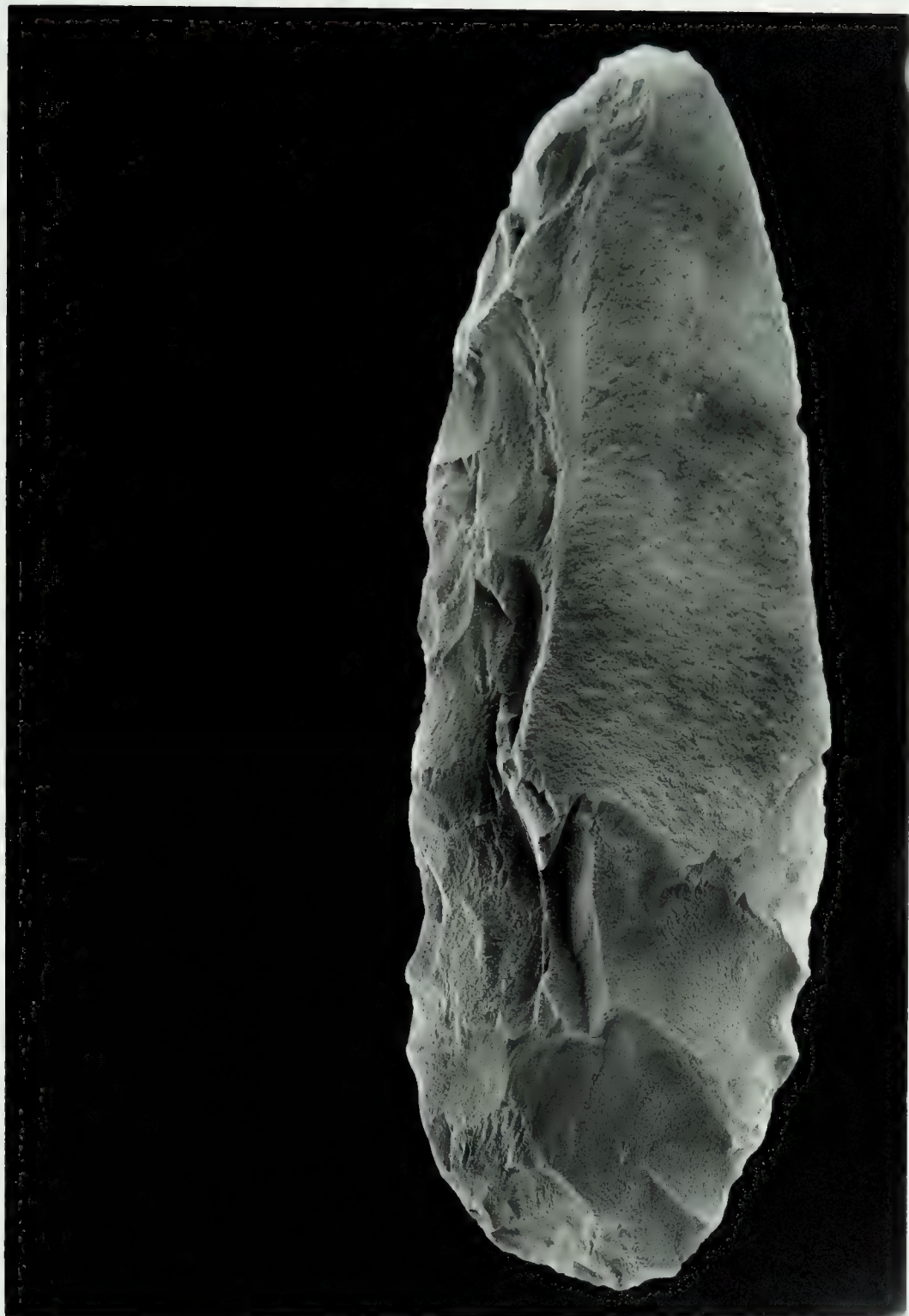


Plate 56. Prehistoric Artifact, C02357, Obverse Face.





Plate 57. Prehistoric Artifact, C02357, Reverse Face.





Table 66: Form for Coding and Interpreting  
Prehistoric Artifacts

1.0 Prehistoric Artifact Identification

1.1 Artifact Face: Obverse and Reverse

1.2 Prehistoric Specimen Provenience: DdGw-2 (Jessup)

1.3 Specimen Catalogue #: C02135

1.4 Photographic Plate Identification: Roll 3, B3, #5  
Roll 4, B4, #1

1.5 Standard Artifact Description:

1.6 Raw Material: Welded Tuff

1.7 Shape/Artifact Class: Pointed Biface

1.8 Flaking (Bifacial/Unifacial): Bifacial

1.9 Metric Size: length - 10.28 cm  
width - 3.50 cm  
thickness - 1.72 cm

1.10 Form/Morphology Description:

This artifact consists of a bi-pointed bifacial preform that was abandoned prior to the final thinning process. Such specimens are common at the Jessup Quarry site and could be considered rejects from the production process. This one has been analyzed in order to determine the production units in use at the site just prior to final biface completion. The reason for the loss of the specimen by aboriginal knappers is the large hump of material left on the reverse face. In attempting to remove this central mass, the biface broke bilaterally and was abandoned.





## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C02135	Main Flake Scar # 05	Edge Treatment on Same Scar	Notes
1.1 Scar Size	substantial		1. The tearing present in one spot is due to a flaw in the raw material and has not been included in the coding.
2.1 Edge Sharpness			
2.2 Margin Damage			
2.3 Microflakes			
2.4 Proximal Edge Morphology			
3.1 Negative Bulb of Force	indistinct		
3.2 Bulb to Scar Transition Angle	gradual		
3.3 Flake Thickness	thin		
4.1 Presence or Absence of Ribs	present		
4.2 Distinctiveness of Ribs	indistinct		
4.3 Rib Spacing And Distribution	far apart on distal 1/2		
4.4 Tearing	0 (1)		
5.1 Scar Shape at Distal Edge	rounded		
5.2 Scar Termination at Distal Edge	feather		



2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar, C02135, Scar 05, Main Scar

	Prehistoric C02135 Scar 05	AB16-7(a) Mod./Sub. Perc. Thin Hammerstone	AB5-9(b) Mod. Perc. Thin Billet	AB7-10 Sub. Perc. Thin Billet
1.1	substantial	+ 1	+ 1	+ 1
2.1				
2.2				
2.3				
2.4				
3.1	indistinct	+ 1	+ 80 - 20	+ 75 - 25
3.2	gradual	+ 1	+ 80 - 20	+ 75 - 25
3.3	thin	+ 80 - 20	+ 80 - 20	+ 50 - 50
4.1	present	+ 80 - 20	+ 20 - 80	+ 50 - 50
4.2	indistinct	+ 1	+ 1	+ 1
4.3	far apart on distal 1/2	- 1	+ 1	+ 1
4.4	0	+ 60 - 40	+ 80 - 20	+ 75 - 25



5.1	rounded	+ 40 - 60	+ 40 - 60	+ 50 - 50
5.2	feather	+ 40 - 60	+ 50 - 50	+ 25 - 75
Total	+	+ 6.8	+ 7.3	+ 7.0
	-	- 3.2	- 2.7	- 3.0
%	+	+ 68	+ 73	+ 70
	-	- 32	- 27	- 30
Score		+ 36	+ 46	+ 40

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Possible + 46 - Mod./Sub. Percussion Thin Billet





## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C02135	Main Flake Scar # 012	Edge Treatment on Same Scar	Notes
1.1 Scar Size	mod. to sub. (2)	very (1) minimal	1. Edge Unit #2 scars 8-26, reverse face scars 6-26 (see scar R6).
2.1 Edge Sharpness	sharp	sharp	
2.2 Margin Damage	0	0	
2.3 Microflakes	0	light	2. There is no specific edge treatment on scar 012 itself.
2.4 Proximal Edge Morphology	flat curved notch	straight (3)	
3.1 Negative Bulb of Force	distinct		
3.2 Bulb to Scar Transition Angle	steep		3. Some remnants of poss. flat curved notches from percussion flaking and remnants of U-shaped pressure notches remain along with convex pro- jections.
3.3 Flake Thickness	thick (2.5 mm)		
4.1 Presence or Absence of Ribs	present		
4.2 Distinctiveness of Ribs	indistinct		
4.3 Rib Spacing And Distribution	rel. far apart and evenly dist.		
4.4 Tearing	0		
5.1 Scar Shape at Distal Edge	rounded	straight/ irregular	
5.2 Scar Termination at Distal Edge	feather	feather & step	



2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar 012, C02135

	Prehistoric C02135 Scar 012	AB7-10		AB5-9		AB11-11		AB16-7(a)		AB12-19	
		Sub. Perc. Thin Billet	Mod. Perc. Thin Billet	Sub. Perc. Thin Billet	Sub. Indirect Perc.	Mod./Sub. Perc. Thin Hammerstone	Sub. Perc. Shape Billet				
1.1	mod./sub. (code sub.)	+ 1	+ 1	+ 1	+ 1	+ 1	+ 1				
2.1	sharp	+ 1	+ 1	+ 1	+ 1	+ 1	+ 1				
2.2	0	+ 50 - 50	+ 40 - 60	+ 66.6 - 33.3	+ 1	+ 1	+ 1				
2.3	0	+ 1	+ 60 - 40	+ 33.3 - 66.7	+ 1	+ 60 - 40	+ 1				
2.4	flat curved notch	+ 75 - 25	+ 1	+ 1	+ 1	+ 1	+ 1				
3.1	distinct	+ 25 - 75	+ 20 - 80	+ 33.3 - 66.7	- 1	- 1	- 1				
3.2	steep	+ 25 - 75	+ 20 - 80	- 1	- 1	- 1	- 1				
3.3	thick	+ 50 - 50	+ 20 - 80	- 1	- 1	+ 20 - 80	+ 25 - 75				
4.1	present	+ 50 - 50	+ 20 - 80	+ 33.3 - 66.7	+ 1	+ 80 - 20	+ 25 - 75				
4.2	indistinct	+ 1	+ 1	+ 1	+ 1	+ 1	+ 1				
4.3	rel. far apart on dist. 1/2	+ 1	+ 1	+ 1	+ 1	+ 1	+ 1				
4.4	0	+ 75 - 25	+ 80 - 20	+ 66.6 - 33.3	+ 1	+ 60 - 40	+ 75 - 25				



5.1	rounded	+ 50 - 50	+ 40 - 60	+ 33.3 - 66.7	+ 40 - 60	+ 25 - 75
5.2	feather	+ 25 - 75	+ 50 - 50	+ 1	+ 40 - 60	+ 1
	+	+ 9.25	+ 8.5	+ 8.67	+ 8	+ 8.5
Total	-	- 4.75	- 5.5	- 5.33	- 6	- 5.5
	+	+ 66.07	+ 60.71	+ 62	+ 57	+ 60.71
%	-	- 33.93	- 39.28	- 38	- 43	- 39.28
Score		+ 32.14	+ 21.53	+ 24	+ 14	+ 2.53

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Possible + 32 - Sub. Perc. Thin Billet



2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar, C02135, Edge Unit #2

	Prehistoric C02135 Edge Unit #2	AB6-13(a)		AB6-13(b)		AB2-2(a)		AB16-7(b)		AB9-5(a)	
		Min. Shear Shape with P.F.	Mod. Shear Shape with P.F.	Min. Shear Shape with P.F.	Isolating P.F.	Min. Platform P.F.	Thin Hammerstone	Min. Perc. Thin	Perc. Billet	Min. Perc. Thin	Perc. Billet
1.1	very minimal	+ 1		+ 1		+ 1		+ 1		+ 1	
2.1	sharp	+ 33.3 - 66.7		+ 1		+ 1		+ 1		+ 1	
2.2	0	+ 83.3 - 16.7		- 1		+ 14.28 - 85.72		+ 34 - 66		- 1	
2.3	light	- 1		- 1		+ 42.85 - 57.15		- 1		- 1	
2.4	straight	+ 1		+ 1		- 1		+ 1		+ 1	
3.1											
3.2											
3.3											
4.1											
4.2											
4.3											
4.4											





5.1	straight/ irregular	+ 1	+ 1	+ 85 - 15	+ 50 - 50	+ 66 - 34
5.2	feather/ step	+ 1	+ 1	+ 1	+ 1	+ 1
Total						
+		+ 5.17	+ 5	+ 4.42	+ 4.84	+ 4.66
-		- 1.83	- 2	- 2.58	- 2.16	- 2.34
+		+ 74	+ 71	+ 63	+ 69	+ 67
-		- 26	- 29	- 37	- 31	- 33
Score		+ 48	+ 42	+ 26	+ 38	+ 34

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Possible + 48 - Min. Shear Shape P.F.

N.B. Unit is not extensive and only sparingly applied.



## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C02135	Main Flake Scar # 023	Edge Treatment on Same Scar	Notes
1.1 Scar Size	mod.	(1)	1. See scar #012 for edge unit.
2.1 Edge Sharpness			2. Removed by edge treatment or more likely was used as a platform for percussion flaking.
2.2 Margin Damage			
2.3 Microflakes			
2.4 Proximal Edge Morphology			
3.1 Negative Bulb of Force	n/a (2)		
3.2 Bulb to Scar Transition Angle	n/a		
3.3 Flake Thickness	thin		
4.1 Presence or Absence of Ribs	present		
4.2 Distinctiveness of Ribs	indistinct		
4.3 Rib Spacing And Distribution	rel. close together & on distal 1/2		
4.4 Tearing	0		
5.1 Scar Shape at Distal Edge	straight and rounded		
5.2 Scar Termination at Distal Edge	feather/step		



2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar 023, C02135

	Prehistoric C02135 Scar 023	AB8-6 Sub. Press. Thin with P.F.	AB9-5(a) Mod. Press. Thin with P.F.	AB16-7(a) Mod./Sub. Perc. Thin Hammerstone	AB5-9(b) Mod. Perc. Thin Billet
1.1	moderate	+ 1	+ 67 - 33	+ 1	+ 1
2.1					
2.2					
2.3					
2.4					
3.1	n/a	n/a	n/a	n/a	n/a
3.2	n/a	n/a	n/a	n/a	n/a
3.3	thin	+ 1	+ 1	+ 80 - 20	+ 80 - 20
4.1	present	+ 50 - 50	+ 22.2 - 77.8	+ 80 - 20	+ 20 - 80
4.2	indistinct	+ 1	+ 1	+ 1	+ 1
4.3	rel. close together on distal 1/2	+ 1	+ 1	- 1	- 1
4.4	0	+ 75 - 25	+ 1	+ 60 - 40	+ 80 - 20





5.1	straight & rounded	+ 1	+ 66.7 - 33.3	+ 1	+ 1
5.2	feather/ step	+ 1	+ 1	+ 1	+ 1
Total					
+		+ 7.25	+ 6.56	+ 6.20	+ 5.80
-		- .75	- 1.44	- 1.80	- 2.20
+		+ 91	+ 82	+ 78	+ 73
-		- 9	- 18	- 22	- 27
Score		+ 82	+ 64	+ 56	+ 46

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Highly Probable + 82 - Sub. Press. Thin with P.F.

N.B. This flake has an unusual platform/percussion bulb area and may be only a scar remnant.



## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C02135		Main Flake Scar # n/a	Edge Treatment on Same Scar	Notes
		(1) Edge Unit 1(a) minimal	(2) Edge Unit 1(b)	1. Edge Unit 1(a) comprises the larger scars 01 to 04 and 027 to 031 plus R1 to 4 and R27 to R32.  2. Edge Unit 1(b) consists of a very minimal treatment on the edge of the above scars.
1.1	Scar Size			
2.1	Edge Sharpness		sharp	
2.2	Margin Damage		0	
2.3	Microflakes		heavy	
2.4	Proximal Edge Morphology		straight	
3.1	Negative Bulb of Force	indistinct		
3.2	Bulb to Scar Transition Angle	gradual		
3.3	Flake Thickness	thin		
4.1	Presence or Absence of Ribs	present		
4.2	Distinctiveness of Ribs	indistinct		
4.3	Rib Spacing And Distribution	rel. close together on distal 1/2		
4.4	Tearing	0		
5.1	Scar Shape at Distal Edge	straight & irregular	straight/irregular	
5.2	Scar Termination at Distal Edge	feather and step	feather and step	



2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar, Edge Unit 1(a) (a group of minimal scars has been coded together) C02135

	Prehistoric C02135 Edge Unit 1(a)	AB16-7(b)		AB30-17		AB9-5(b)		AB13-15		AB5-9(a)	
		Minimal	Perc.	Mod.	Perc.	Thin	with P.F.	Min.	Press.	Min.	Perc.
		Thin Hammerston		Shape Hammer.		Thin	with P.F.	Shape	with P.F.	Thin Billet	
1.1	minimal	+ 1		+ 66.6 - 33.3		+ 1		+ 1		+ 77.8 - 22.2	
2.1											
2.2											
2.3											
2.4											
3.1	indistinct	+ 1		+ 1		+ 1		- 1		+ 1	
3.2	gradual	+ 1		+ 1		+ 1		- 1		+ 1	
3.3	thin	+ 1		+ 1		+ 1		- 1		+ 88.9 - 11.1	
4.1	present	- 1		+ 33.3 - 66.7		+ 25 - 75		- 1		- 1	
4.2	indistinct	n/a		+ 1		+ 1		n/a		n/a	
4.3	rel. close together on distal 1/2	n/a		- 1		+ 1		n/a		n/a	
4.4	0	+ 1		+ 66.7 - 33.7		+ 1		+ 1		+ 88.9 - 11.1	



5.1	straight and irregular	+ 50 - 50	+ 50 - 50	+ 1	+ 50 - 50	+ 66 - 34
5.2	feather & step	+ 1	+ 1	+ 1	+ 1	+ 1
Total						
	+	+ 6.5	+ 7.17	+ 9.25	+ 3.5	+ 6.22
	-	- 1.5	- 2.83	- .75	- 4.5	- 1.78
	+	+ 81	+ 72	+ 93	+ 44	+ 78
	-	- 19	- 28	- 7	- 56	- 22
Score		+ 62	+ 44	+ 86	- 12	+ 56

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Highly Probable + 86 - Min. Press. Thin with P.F.





2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar, C02135, Edge Unit # 1(b)

	Prehistoric C02135 Edge Unit 1	AB6-13(a) Min. Shear Shape with P.F.	AB6-13(b) Mod. Shear Shape with P.F.	AB2-2(b) Min. Press. Rub with P.F.
1.1	very minimal	+ 1	+ 1	+ 1
2.1	sharp to intermediate	+ 1	+ 50 - 50	+ 50 - 50
2.2	0	+ 83.3-16.7	- 1	- 1
2.3	heavy	+ 66.7 - 33.3	+ 1	+ 1
2.4	straight	+ 1	+ 1	+ 84 - 16
3.1				
3.2				
3.3				
4.1				
4.2				
4.3				
4.4				



5.1	straight/ irregular	+ 1	+ 1	+ 50 - 50
5.2	feather/ step	+ 1	+ 1	+ 1
Total				
+		+ 6.5	+ 5.5	+ 4.84
-		- .5	- 1.5	- 2.16
+		+ 93	+ 79	+ 69
-		- 7	- 21	- 31
Score		+ 86	+ 58	+ 38

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Highly Probable + 86 - Min. Shear Shape with P.F.



## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C02135	Main Flake Scar # R6	Edge Treatment on Same Scar	Notes
1.1 Scar Size	very substantial	(1)	1. Edge Unit 2 - Scars 6-26, obverse face, scars 8-26 (see scar 012).
2.1 Edge Sharpness			
2.2 Margin Damage			
2.3 Microflakes			2. Some remnants of poss. flat curved notches from percussion flaking and U-shaped notches from pressure flaking remain.
2.4 Proximal Edge Morphology	(2)		
3.1 Negative Bulb of Force	indistinct		
3.2 Bulb to Scar Transition Angle	gradual		3. The tearing is due to a flaw in the raw lithic material and has not been included in the coding.
3.3 Flake Thickness	thin		
4.1 Presence or Absence of Ribs	present		
4.2 Distinctiveness of Ribs	indistinct		
4.3 Rib Spacing And Distribution	rel. far apart on distal 1/2		
4.4 Tearing	0 (3)		
5.1 Scar Shape at Distal Edge	rounded		
5.2 Scar Termination at Distal Edge	feather		





2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar R6, Main Scar, C02135

Prehistoric C02135 Scar R6	AB7-10 Sub. Perc. Thin Billet	AB5-9(a) Mod. Perc. Thin Billet	AB11-11 Sub. Indirect Percussion	AB16-7(a) Mod./Sub. Perc. Thin Hammerstone
1.1        very substantial	+ 1	+ 1	- 1	+ 1
2.1				
2.2				
2.3				
2.4				
3.1        indistinct	+ 75 - 25	+ 80 - 20	+ 66.7 - 33.3	+ 1
3.2        gradual	+ 75 - 25	+ 80 - 20	+ 1	+ 1
3.3        thin	+ 50 - 50	+ 80 - 20	+ 1	+ 80 - 20
4.1        present	+ 50 - 50	+ 20 - 80	+ 33.3 - 66.7	+ 80 - 20
4.2        indistinct	+ 1	+ 1	+ 1	+ 1
4.3        rel. far apart on distal 1/2	+ 1	+ 1	+ 1	- 1
4.4        0	+ 75 - 25	+ 80 - 20	+ 66.6 - 33.3	+ 60 - 40



5.1	rounded	+ 50 - 50	+ 40 - 60	+ 33.3 - 66.7	+ 40 - 60
5.2	feather	+ 25 - 75	+ 50 - 50	+ 1	+ 40 - 60
Total	+	+ 7.0	+ 7.3	+ 7.0	+ 7.0
	-	- 3.0	- 2.7	- 3.0	- 3.0
%	+	+ 10	+ 73	+ 70	+ 70
	-	- 30	- 27	- 30	- 30
Score		+ 40	+ 46	+ 40	+ 40

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Possible + 46 - Mod./Sub. Perc. Thin Billet

The coding is very close on this particular scar. Based on the rib distribution pattern and size, it has been identified as mod./sub. billet percussion thinning.



## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C02135	Main Flake Scar # R12	Edge Treatment on Same Scar	Notes
1.1 Scar Size	sub.		
2.1 Edge Sharpness			
2.2 Margin Damage			
2.3 Microflakes			
2.4 Proximal Edge Morphology			
3.1 Negative Bulb of Force	indistinct		
3.2 Bulb to Scar Transition Angle	gradual		
3.3 Flake Thickness	thin		
4.1 Presence or Absence of Ribs	present		
4.2 Distinctiveness of Ribs	indistinct		
4.3 Rib Spacing And Distribution	rel. close together on distal 1/2		
4.4 Tearing	0		
5.1 Scar Shape at Distal Edge	mostly rounded some straight		
5.2 Scar Termination at Distal Edge	step and feather		



2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar R12, C02135

	Prehistoric C02135 Scar R12	AB16-7(a) Mod./Sub. Perc. Thin Hammerstone	AB7-10 Sub. Perc. Thin Billet	AB8-6 Sub. Press. Thin with P.F.	AB12-19 Sub. Perc. Shape Billet	AB14-16(a) Sub. Perc. Shape Hammerstone
1.1	mod. to sub.	+ 1	+ 1	+ 1	+ 1	+ 1
2.1						
2.2						
2.3						
2.4						
3.1	indistinct	+ 1	+ 75 - 25	+ 1	+ 1	+ 1
3.2	gradual	+ 1	+ 75 - 25	+ 1	+ 1	+ 1
3.3	thin	+ 80 - 20	+ 50 - 50	+ 1	+ 75 - 25	+ 1
4.1	present	+ 80 - 20	+ 50 - 50	+ 50 - 50	+ 25 - 75	+ 33.3 - 66.7
4.2	indistinct	+ 1	+ 1	+ 1	+ 1	+ 1
4.3	rel. close on distal 1/2	- 1	- 1	+ 1	- 1	- 1
4.4	0	+ 60 - 40	+ 75 - 25	+ 75 - 25	+ 75 - 25	+ 66.7 - 33.3





5.1	mostly rounded some straight	+ 1	+ 50 - 50	+ 1	+ 1	+ 33.3 - 66.7
5.2	step and feather	+ 1	+ 1	+ 1	+ 50 - 50	+ 1
<hr/>						
Total	+	+ 8.20	+ 6.75	+ 9.25	+ 7.25	+ 7.33
	-	- 1.80	- 3.25	- .75	- 2.75	- 2.67
<hr/>						
%	+	+ 82	+ 68	+ 93	+ 73	+ 73
	-	- 18	- 32	- 7	- 27	- 27
<hr/>						
Score		+ 64	+ 36	+ 86	+ 46	+ 46

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Highly Probable + 86 - Sub. Press. Thin with P.F.

N.B.

The pressure flaking appears to be superimposed over an earlier and much larger, possibly billet percussion thin scar.



2.4 Summary of Behavior Units (Morpho-Units) Identified on Artifact C02135

Main Scar #	Edge Unit Scar #	Rating on Scoring Scale	Final +/- Score	Behavior Unit	Experimental Control Specimen
05		Possible	+ 46	Mod./Sub. Perc. Thin Billet	AB5-9(b) and AB7-10
012		Indeterminate	+ 32	Sub. Perc. Thin Billet	AB7-10
	Edge Unit 2	Possible	+ 48	Min. Shear Shape P.F.	AB6-13(a)
023		Highly Probable	+ 82	Sub. Press. Thin with P.F.	AB8-6
small scar grouping	Edge Unit 1(a)	Highly Probable	+ 86	Min. Press. Thin with P.F.	AB9-5(b)
small scar grouping	Edge Unit 1(b)	Highly Probable	+ 72	Min. Shear Shape with P.F.	AB6-13(a)
R6		Possible	+ 46	Mod./Sub. Perc. Thin Billet	AB5-9(a) and AB7-10
R12		Highly Probable	+ 86	Sub. Press. Thin with P.F.	AB8-6
R32	scars R27 - R32	Highly Probable	+ 86	Min. Press. Thin with P.F.	AB9-5(b)



### 3.0 Interpretation of Behavior (Technological) Units

(a) Transforming Behavior Units into Production Units: C02135

#### 3.1 Function of Percussion Thinning/Shaping Units (moderate to very substantial size scars on specimen)

(a) Substantial and Moderate Percussion Thin with Billet: This behavior unit was used for face paring the specimen on both the obverse and reverse faces. Face paring produces the familiar biface thinning flakes. Production Unit Code is 40:3/4, 41, 51.

#### 3.2 Function of Pressure Thinning/Shaping Units (minimal to substantial size scars on specimen)

(a) Minimum to Substantial Pressure Thin with Pressure Flaker: These behavior units were used for face paring. Production Unit 40:2/3/4, 31, 31.

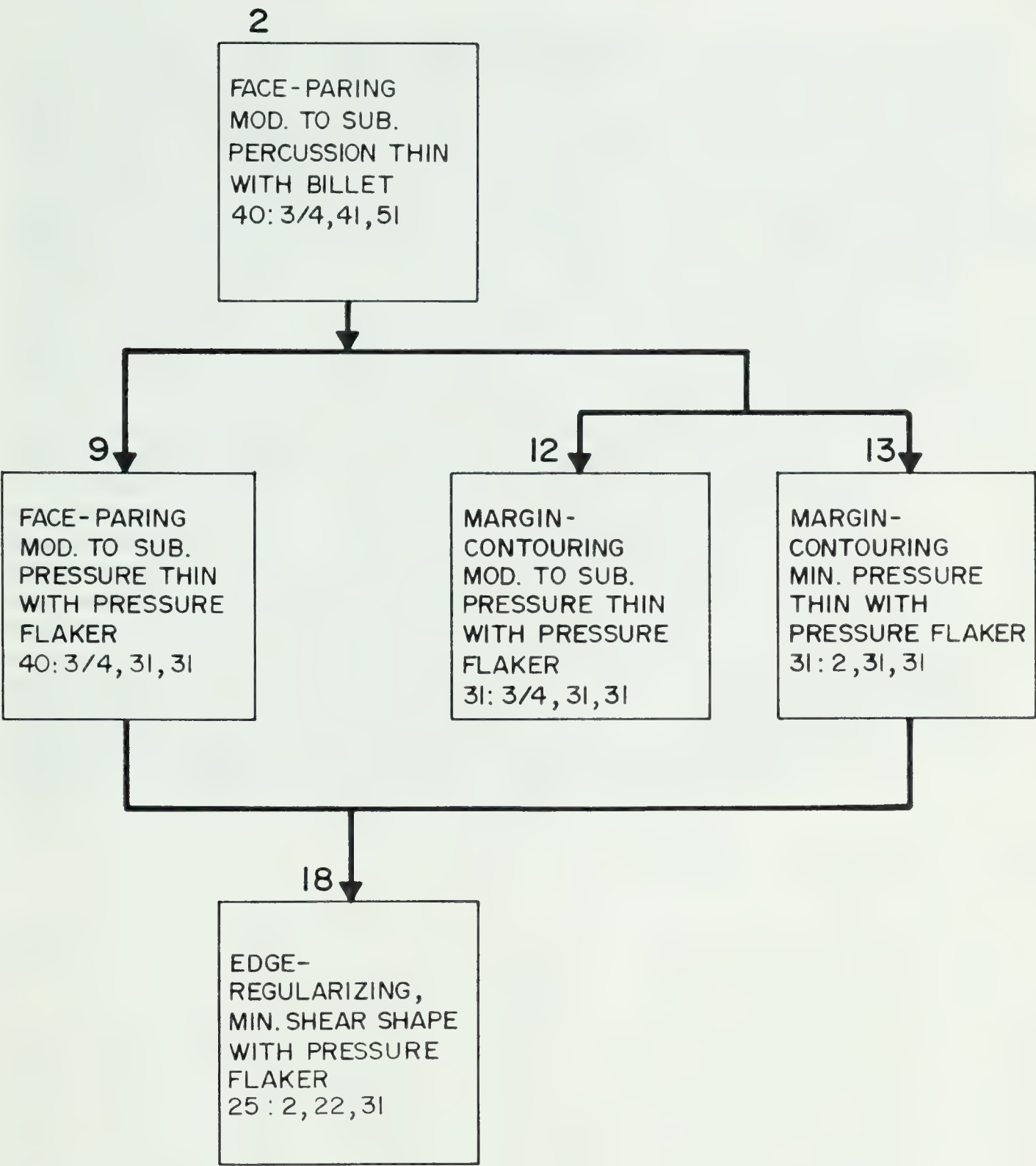
(b) The same behavior units (above) were also used for margin contouring - in this case it involved removing material from an overly thick edge. Production Unit Code is 31:2/3/4, 31, 31.

#### 3.3 Function of Edge Units (minimal to very minimal size scars on specimen)

One edge unit was identified, minimal shear shape with a pressure flaker. This unit was used at the top of the specimen to straighten the edge primarily by reducing the U-shaped pressure notches (found on all pressure flaking platforms) to very shallow indistinct notches. The unit also strengthens and reduces the edge although the secondary reducing effect on this specimen was very minimal. Production Unit Code is 23/24/25:2, 22, 31.







(b) Reconstructing Sequencing of Production Units: C02135

3.4 Flow Diagram of Production Units (above)



### 3.5 Description and Discussion of Technological Grammar Found on Artifact

The above biface rough out comprising a bi-pointed preform, broke before completion and was abandoned by the aboriginal flint knappers prior to completion. The primary thinning on the specimen consists of substantial and moderate percussion thinning with an antler billet (see flake scars 05, 012, and R6). The face paring produces the familiar biface thinning flakes. Following and overlying the percussion work (see scar R12 overlaid on scar R14) is substantial pressure thinning with a pressure flaker. The purpose of this thinning (face paring) unit may have been margin contouring (i.e., removing thin flakes on the margin to produce the desired curvature and reduce an overly thick edge). At the tip of the specimen, minimal pressure thinning with a pressure flaker was used to remove a series of identifiable parallel pressure flakes on both faces. This created the desired bifacial edge. As pressure flaking always leaves U-shaped notches and percussion flaking always leaves flat curved notches (see experiments), in order to straighten the edge, an edge unit was utilized. Both in areas of percussion flaking and substantial pressure flaking a sporadically applied minimal shear shape with pressure flaker was used for edge centering, straightening and regularizing. At the tip of the specimen and overlying the minimal pressure flaking a more uniform but very minimal moderate shear shape with pressure flake was used. At this point the artifact was still far from being a completed biface and required further percussion thinning to remove a large lump of material (flakes R23, 25, 10, 11). An attempt to do this from the opposite or obverse side failed and broke the specimen. It is interesting to note that part of the original platform from the flake that broke the specimen is still present and attached to scar 0-12.



DdGw-2 CO 2135

OBVERSE FACE

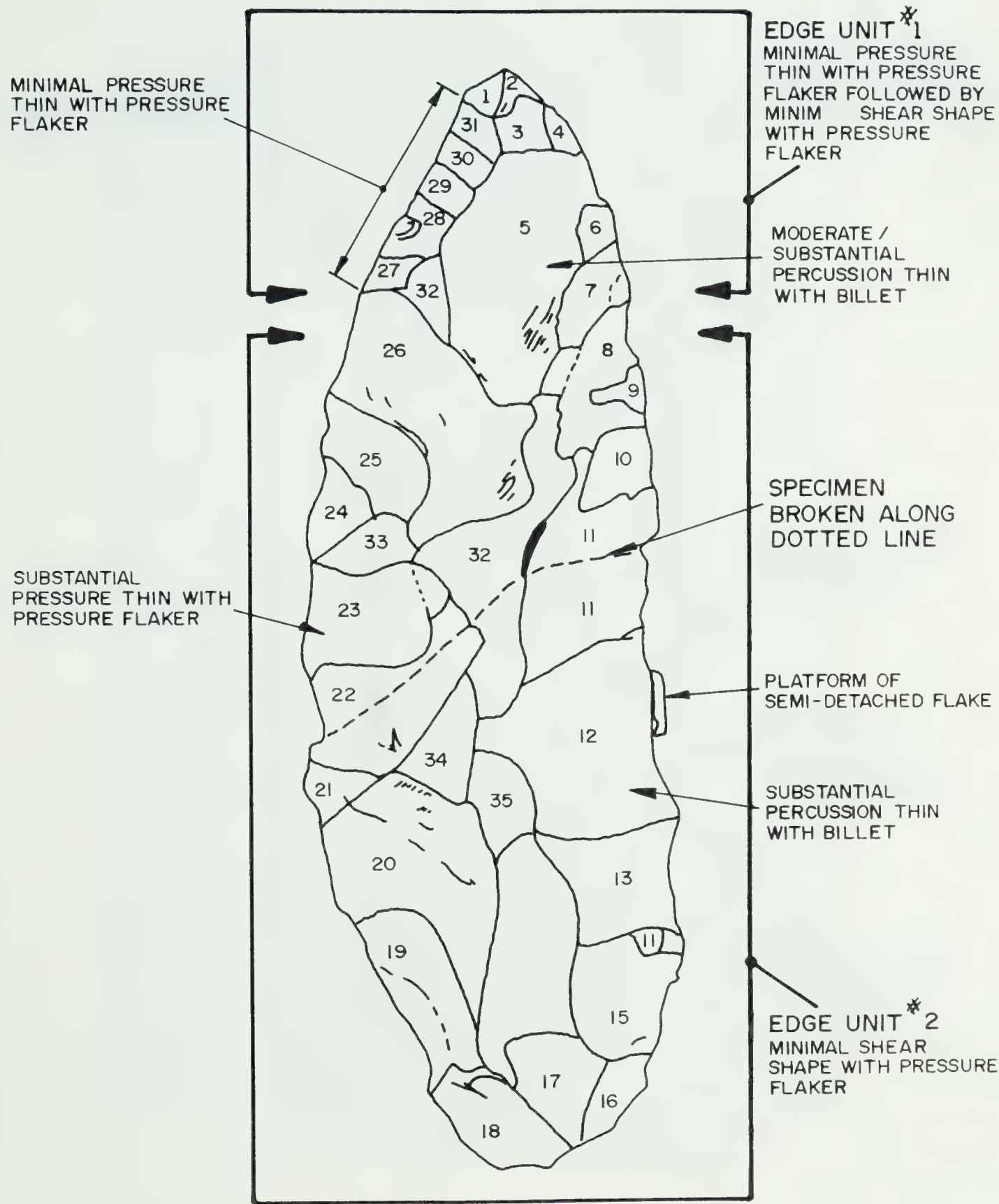


FIGURE 48





REVERSE FACE

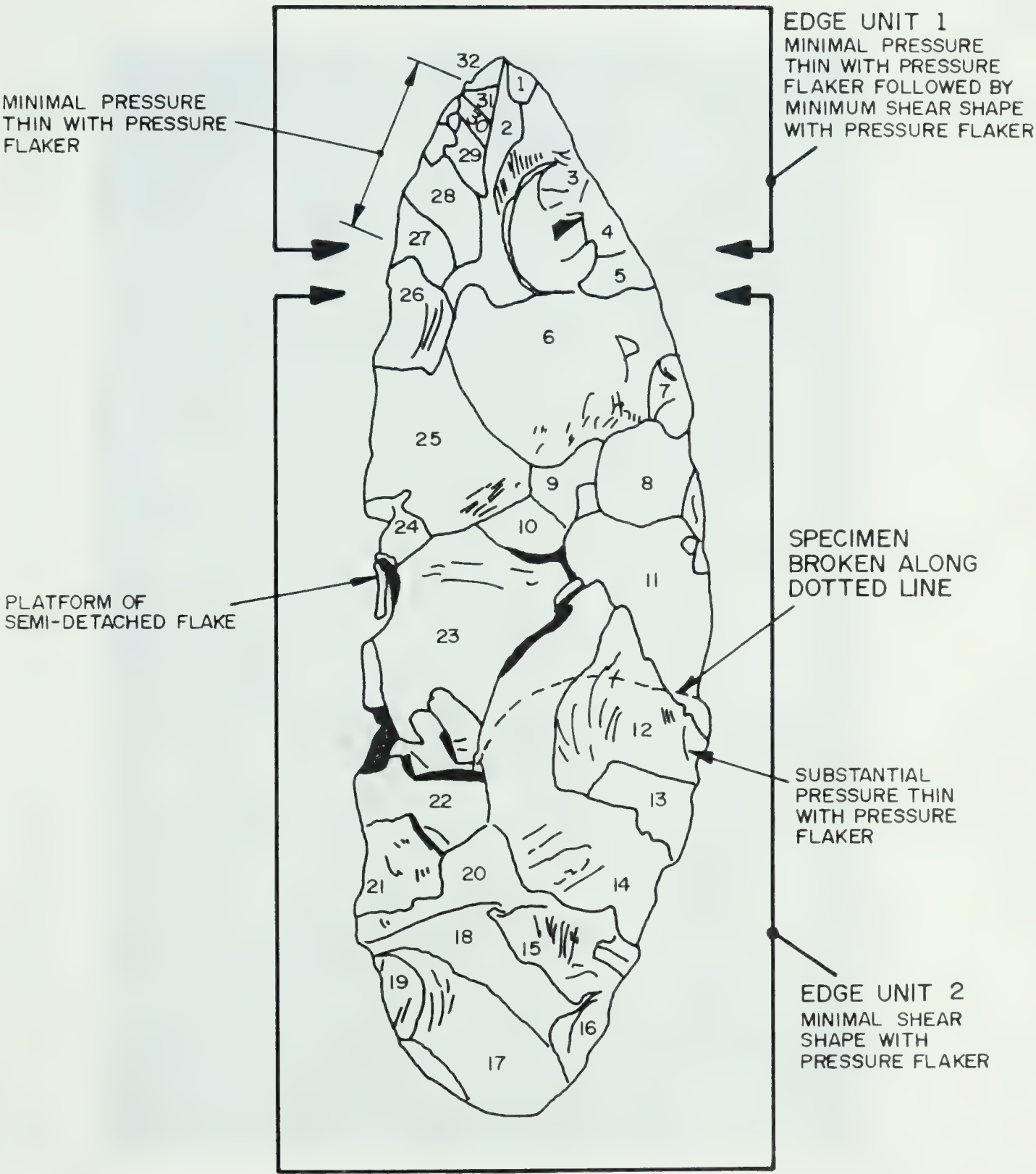


FIGURE 49





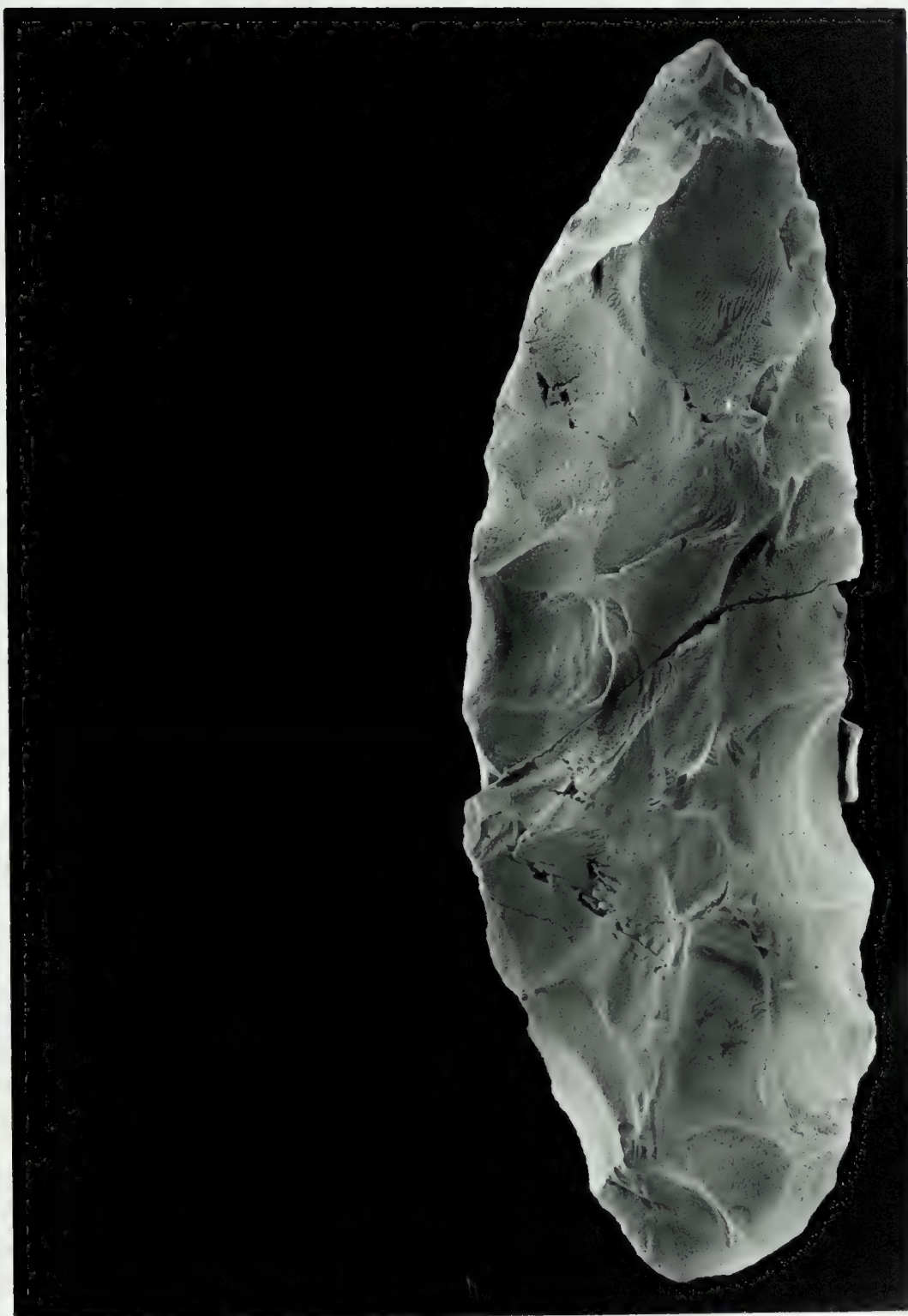


Plate 58. Prehistoric Artifact C02135, Obverse Face.





Plate 59. Prehistoric Artifact C02135, Reverse Face.



Table 67: Form for Coding and Interpreting  
Prehistoric Artifacts

## 1.0 Prehistoric Artifact Identification

1.1 Artifact Face: Obverse and Reverse

1.2 Prehistoric Specimen Provenience: Jessup, DdGw-2

1.3 Specimen Catalogue #: C02082

1.4 Photographic Plate Identification: Roll 3, B3, #4  
Roll 3, B4, #29

1.5 Standard Artifact Description:

1.6 Raw Material: Welded Tuff

1.7 Shape/Artifact Class: Bi-pointed Biface

1.8 Flaking (Bifacial/Unifacial): Bifacial

1.9 Metric Size: length - 13.70 cm  
width - 3.63 cm  
thickness - 1.19 cm

1.10 Form/Morphology Description:

This bi-pointed biface snapped at mid-section due to removal of an overly thick thinning flake that resulted in a hinged step fracture which broke the specimen. The overall artifact is rather narrow and tapers at each end to a blunted slightly convex points and/or bases. Only a small portion of the original flake core surface remains on the reverse side.





## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C02082		Main Flake Scar # 021	Edge Treatment on Same Scar	Notes
1.1	Scar Size	sub.	min. (1)	1. Edge Unit 1 - scars 1-8 and scars 17-36 obverse face, and scars 1-11 and 19-23 reverse face.
2.1	Edge Sharpness		intermediate to sharp	
2.2	Margin Damage		0	
2.3	Microflakes		heavy	
2.4	Proximal Edge Morphology		straight	
3.1	Negative Bulb of Force	indistinct		
3.2	Bulb to Scar Transition Angle	gradual		
3.3	Flake Thickness	thin		
4.1	Presence or Absence of Ribs	0		
4.2	Distinctiveness of Ribs	0		
4.3	Rib Spacing And Distribution	0		
4.4	Tearing	0		
5.1	Scar Shape at Distal Edge	straight/ rounded	rounded, some straight	
5.2	Scar Termination at Distal Edge	feather	pred. feather some step	



2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar 021, C02082

	Prehistoric C02082 Scar 021	AB7-10 Sub. Perc. Thin Billet	AB11-11 Sub. Indirect Perc.	AB16-17(a) Mod./Sub. Perc. Thin Hammerstone
1.1	substantial	+ 1	+ 1	+ 1
2.1				
2.2				
2.3				
2.4				
3.1	indistinct	+ 75 - 25	+ 66.7 - 33.3	+ 1
3.2	gradual	+ 75 - 25	+ 1	+ 1
3.3	thin	+ 50 - 50	+ 1	+ 80 - 20
4.1	0	+ 50 - 50	+ 66.7 - 33.3	+ 20 - 80
4.2	n/a	n/a	n/a	n/a
4.3	n/a	n/a	n/a	n/a
4.4	0	+ 75 - 25	+ 66.7 - 33.3	+ 60 - 40



5.1	straight/ rounded	+ 50 - 50	+ 33.3 - 66.7	+ 1
5.2	feather	+ 25 - 75	+ 1	+ 40 - 60
	+	+ 5	+ 6.33	+ 6
Total	-	- 3	- 1.67	- 2
	+	+ 63	+ 79	+ 75
%	-	- 37	- 21	- 25
Score		+ 26	+ 58	+ 50

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Possible + 50 - Mod./Sub. Perc. Thin Hammerstone

N.B.  
The above scar was identified as mod./sub. perc. thin hammerstone based on the size, thinness and flatness, plus the very indistinct percussion bulb.



2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar, C02082, Edge Unit 1 (coded on scar 021)

Prehistoric C02082 Edge Unit 1	AB10-1 Min. Rub Buffet Hammerstone	AB10-1(b) Min. Rub Buffet Billet	AB6-13(a) Min. Shear Shape P.F.	AB6-13(b) Mod. Shear Shape P.F.	AB15-18(b) Min. Perc. Shape Billet
1.1	minimal	+ 1	+ 1	+ 1	+ 1
2.1	intermediate to sharp	+ 1	+ 15 - 85	+ 1	+ 50 - 50
2.2	0	- 1	+ 85 - 15	+ 83.3 - 16.7	- 1
2.3	heavy	- 1	- 1	+ 66.7 - 33.3	+ 1
2.4	straight	+ 1	+ 1	+ 1	+ 1
3.1					
3.2					
3.3					
4.1					
4.2					
4.3					
4.4					





5.1	pred. rounded some straight	+ 75 - 25	- 1	+ 50 - 50	+ 1
5.2	pred. feather some step	+ 80 - 20	+ 1	+ 50 - 50	+ 1
Total		+ 4.55	+ 4	+ 5.5	+ 5.3
		- 2.45	- 3	- 1.5	- 1.7
		+ 65	+ 57	+ 79	+ 71
		- 35	- 43	- 21	- 29
Score		+ 30	+ 14	+ 58	+ 42
					+ 52

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

- Possible + 58 - Min. Shear Shape P.F.
- Possible + 42 - Mod. Shear Shape P.F.

Unit identified as moderate shear shape with pressure flaker.



## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C02082	Main Flake Scar # 041	Edge Treatment on Same Scar	Notes
1.1 Scar Size	very sub.	(1)	1. Edge Unit 1 (see scar 021).
2.1 Edge Sharpness			
2.2 Margin Damage			
2.3 Microflakes			
2.4 Proximal Edge Morphology			
3.1 Negative Bulb of Force	indistinct		
3.2 Bulb to Scar Transition Angle	gradual		
3.3 Flake Thickness	thin		
4.1 Presence or Absence of Ribs	0		
4.2 Distinctiveness of Ribs	n/a		
4.3 Rib Spacing And Distribution	n/a		
4.4 Tearing	0		
5.1 Scar Shape at Distal Edge	straight		
5.2 Scar Termination at Distal Edge	feather		



2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar 041, C02082

	Prehistoric C02082 Scar 041	AB7-10 Sub. Perc. Thin Billet	AB11-11 Sub. Indirect Perc.	AB16-17(a) Mod./Sub. Perc. Thin Hammerstone
1.1	very substantial	+ 1	+ 1	+ 1
2.1				
2.2				
2.3				
2.4				
3.1	indistinct	+ 75 - 25	+ 66.7 - 33.3	+ 1
3.2	gradual	+ 75 - 25	+ 1	+ 1
3.3	thin	+ 50 - 50	+ 1	+ 80 - 20
4.1	0	+ 50 - 50	+ 66.7 - 33.3	+ 20 - 80
4.2	n/a	n/a	n/a	n/a
4.3	n/a	n/a	n/a	n/a
4.4	0	+ 75 - 25	+ 33.3 - 66.7	+ 1





5.1	straight	- 1	+ 33.3 - 66.7	+ 60 - 40
5.2	feather	+ 25 - 75	+ 1	+ 40 - 60
	+	+ 4.5	+ 6	+ 6
Total	-	- 3.5	- 2	- 2
	+	+ 56	+ 75	+ 75
%	-	- 44	- 25	- 25
Score		+ 12	+ 50	+ 50

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Possible + 50 - Mod./Sub. Perc. Thin Hammerstone



## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C02082	Main Flake Scar # 032	Edge Treatment on Same Scar	Notes
1.1 Scar Size	moderate	(1)	1. Edge treatment #1, unifacial production unit applied from the reverse face (i.e., the reverse side was used as a platform. (See scar 021)).
2.1 Edge Sharpness	sharp (2)		
2.2 Margin Damage	n/a		
2.3 Microflakes	n/a		
2.4 Proximal Edge Morphology	n/a		2. Edge treatment not pronounced on this scar - platform intact enough for coding.
3.1 Negative Bulb of Force	distinct		
3.2 Bulb to Scar Transition Angle	steep		
3.3 Flake Thickness	thin		
4.1 Presence or Absence of Ribs	0		
4.2 Distinctiveness of Ribs	n/a		
4.3 Rib Spacing And Distribution	n/a		
4.4 Tearing	0		
5.1 Scar Shape at Distal Edge	straight		
5.2 Scar Termination at Distal Edge	step		



## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C02082	Main Flake Scar # R2	Edge Treatment on Same Scar	Notes
1.1 Scar Size	substantial	(1)	1. Edge Unit 1 - see 021.
2.1 Edge Sharpness	sharp		
2.2 Margin Damage	n/a		
2.3 Microflakes	n/a		
2.4 Proximal Edge Morphology	flat curved notch		
3.1 Negative Bulb of Force	indistinct		
3.2 Bulb to Scar Transition Angle	gradual		
3.3 Flake Thickness	thin		
4.1 Presence or Absence of Ribs	0		
4.2 Distinctiveness of Ribs	n/a		
4.3 Rib Spacing And Distribution	n/a		
4.4 Tearing	light		
5.1 Scar Shape at Distal Edge	straight		
5.2 Scar Termination at Distal Edge	feather		



2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar 032, C02082

Prehistoric C02082 Scar 032		AB5-9(a) Mod. Perc. Thin Billet	AB15-18(a) Mod. Perc. Shape Billet	AB16-7(a) Mod./Sub. Perc. Thin Hammerstone	AB3-17 Perc. Shape Hammerstone
1.1	moderate	+ 1	+ 1	+ 1	+ 1
2.1	sharp	+ 1	+ 1	+ 1	+ 1
2.2	n/a	n/a	n/a	n/a	n/a
2.3	n/a	n/a	n/a	n/a	n/a
2.4	n/a	n/a	n/a	n/a	n/a
3.1	distinct	+ 20 - 80	+ 14.28 - 85.72	- 1	- 1
3.2	gradual	+ 80 - 20	+ 1	+ 1	+ 1
3.3	thin	+ 80 - 20	+ 85.72 - 14.28	+ 80 - 20	+ 1
4.1	0	+ 80 - 20	+ 85.72 - 14.28	+ 20 - 80	+ 66.7 - 33.3
4.2	n/a	n/a	n/a	n/a	n/a
4.3	n/a	n/a	n/a	n/a	n/a
4.4	0	+ 80 - 20	+ 85.72 - 14.28	+ 60 - 40	+ 66.7 - 33.3





5.1	straight	+ 60 - 40	+ 57.1 - 42.9	+ 60 - 40	+ 1
5.2	feather	+ 50 - 50	+ 28.6 - 71.4	+ 40 - 60	+ 33.3 - 66.7
Total					
+		+ 6.5	+ 5.57	+ 5.6	+ 6.7
-		- 2.5	- 3.43	- 3.4	- 2.3
+		+ 72	+ 62	+ 62	+ 74
%					
-		- 28	- 38	- 38	- 26
Score					
		+ 44	+ 24	+ 24	+ 48

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Possible + 48 - Moderate Percussion Shape Hammerstone

N.B.

Although the scores are close here - hammerstone is identified, as a hammerstone was used elsewhere in the specimen.



2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar R2, C02082

	Prehistoric C02082 Scar R2	AB7-10		AB5-9(a)		AB11-11		AB16-17(a)	
		Sub. Perc. Thin Billet		Mod. Perc. Thin Billet		Sub. Indirect Perc.		Mod./Sub. Perc. Thin Hammerstone	
1.1	substantial	+ 1		+ 1		+ 1		+ 1	
2.1	sharp	+ 1		+ 1		+ 1		+ 1	
2.2	n/a	n/a		n/a		n/a		n/a	
2.3	n/a	n/a		n/a		n/a		n/a	
2.4	flat curved notch	+ 1		+ 1		+ 1		+ 1	
3.1	indistinct	+ 75 - 25		+ 80 - 20		+ 66.7 - 33.3		+ 1	
3.2	gradual	+ 75 - 25		+ 80 - 20		+ 1		+ 1	
3.3	thin	+ 50 - 50		+ 80 - 20		+ 1		+ 80 - 20	
4.1	0	+ 50 - 50		+ 80 - 20		+ 66.7 - 33.3		+ 20 - 80	
4.2	n/a	n/a		n/a		n/a		n/a	
4.3	n/a	n/a		n/a		n/a		n/a	
4.4	light	+ 25 - 75		+ 20 - 80		+ 33.3 - 66.7		+ 40 - 60	



5.1	straight	- 1	+ 60 - 40	- 1	+ 60 - 40
5.2	feather	+ 25 - 75	+ 50 - 50	+ 1	+ 40 - 60
<hr/>					
	+	+ 6	+ 7.5	+ 7.67	+ 7.4
Total	-	- 4	- 2.5	- 2.33	- 2.6
<hr/>					
	+	+ 60	+ 75	+ 77	+ 74
<hr/>					
%	-	- 40	- 25	- 23	- 26
<hr/>					
Score		+ 20	+ 50	+ 54	+ 48
<hr/>					

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Possible + 48 - Mod./Sub. Perc. Thin Hammerstone

Based on the flatness of the flakes and the indistinct percussion bulbs plus the presence of other hammerstone work on the specimen, the above scar is tentatively identified as hammerstone percussion, even though billet and hammerstone have essentially identical scores.





## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C02082	Main Flake Scar # R3	Edge Treatment on Same Scar	Notes
1.1 Scar Size	sub.	(1)	1. Edge Unit 1 - see scar 021.
2.1 Edge Sharpness	sharp (2)		2. Platform intact enough for coding.
2.2 Margin Damage	n/a		
2.3 Microflakes	n/a		
2.4 Proximal Edge Morphology	flat curved notch		
3.1 Negative Bulb of Force	indistinct		
3.2 Bulb to Scar Transition Angle	gradual		
3.3 Flake Thickness	thin		
4.1 Presence or Absence of Ribs	0		
4.2 Distinctiveness of Ribs	n/a		
4.3 Rib Spacing And Distribution	n/a		
4.4 Tearing	light		
5.1 Scar Shape at Distal Edge	straight		
5.2 Scar Termination at Distal Edge	feather		



2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar R3, C02082

Prehistoric C02082 Scar R3 * and R4	
1.1	sub.
2.1	sharp
2.2	n/a
2.3	n/a
2.4	flat curved notch
3.1	indistinct
3.2	gradual
3.3	thin
4.1	0
4.2	n/a
4.3	n/a
4.4	light



5.1	straight
5.2	feather
Total	+
	-
	+
%	
	-
Score	

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Possible + 48 - Mod./Sub. Percussion Thin with Hammerstone

\* Same morphology and identification as previous scar R2.



## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C02082	Main Flake Scar # R20	Edge Treatment on Same Scar	Notes
1.1 Scar Size	mod.	(1)	1. Edge Unit 1 - see scar 021.
2.1 Edge Sharpness			
2.2 Margin Damage			
2.3 Microflakes			
2.4 Proximal Edge Morphology			
3.1 Negative Bulb of Force	indistinct		
3.2 Bulb to Scar Transition Angle	gradual		
3.3 Flake Thickness	thin		
4.1 Presence or Absence of Ribs	0		
4.2 Distinctiveness of Ribs	0		
4.3 Rib Spacing And Distribution	0		
4.4 Tearing	light		
5.1 Scar Shape at Distal Edge	straight		
5.2 Scar Termination at Distal Edge	feather		





2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar R20, C02082

	Prehistoric C02082 Scar R20	AB16-7(a) Mod./Sub. Perc. Thin Hammerstone	AB3-17 Mod. Perc. Hammerstone	AB5-9(b) Mod. Perc. Thin Billet	AB15-18(a) Mod. Perc. Shape Billet
1.1	moderate	+ 1	+ 1	+ 1	+ 1
2.1					
2.2					
2.3					
2.4					
3.1	indistinct	+ 1	+ 1	+ 80 - 20	+ 85.72 - 14.28
3.2	gradual	+ 1	+ 1	+ 1	+ 80 - 20
3.3	thin	+ 80 - 20	+ 1	+ 80 - 20	+ 85.12 - 14.28
4.1	0	+ 20 - 80	+ 33.3 - 66.7	+ 80 - 20	+ 85.12 - 14.28
4.2	n/a	n/a	n/a	n/a	n/a
4.3	n/a	n/a	n/a	n/a	n/a
4.4	0	+ 60 - 40	+ 66.7 - 33.3	+ 40 - 60	+ 42.9 - 57.1



5.1	straight	+ 60 - 40	+ 1	+ 60 - 40	+ 57.1 - 42.9
5.2	feather	+ 40 - 60	+ 33.3 - 66.7	+ 50 - 50	+ 71.4 - 28.6
	+	+ 5.6	+ 6.33	+ 5.9	+ 6.09
Total	-	- 2.4	- 1.67	- 2.1	- 1.91
	+	+ 70	+ 79	+ 74	+ 76
%	-	- 30	- 21	- 26	- 24
Score		+ 40	+ 58	+ 48	+ 52

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Possible + 58 - Mod. Perc. Shape Hammerstone



## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C02082	Main Flake Scar # n/a	Edge Treatment on Same Scar	Notes
1.1 Scar Size	n/a (2)	very min. (1)	1. Edge Unit 2 scars 9-16 obverse side and scars 12-18 reverse side.  2. No main scars coded with this edge unit. Contains coding for edge unit #3 only.
2.1 Edge Sharpness		intermediate	
2.2 Margin Damage		heavy	
2.3 Microflakes		0	
2.4 Proximal Edge Morphology		straight	
3.1 Negative Bulb of Force			
3.2 Bulb to Scar Transition Angle			
3.3 Flake Thickness			
4.1 Presence or Absence of Ribs			
4.2 Distinctiveness of Ribs			
4.3 Rib Spacing And Distribution			
4.4 Tearing			
5.1 Scar Shape at Distal Edge		pred. straight	
5.2 Scar Termination at Distal Edge		pred. step	





2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar, Edge Unit #2, C02082

Prehistoric C02082 Edge Unit 2		AB10-1(b) Min. Rub Buffet/Billet	AB10-1(a) Min. Rub Buffet Hammerstone	AB6-13(a) Min. Shear Shape P.F.	AB14-16(b) Min. Perc. Shape Hammerstone
1.1	very min.	+ 1	+ 1	+ 1	+ 1
2.1	intermediate	+ 75 - 85	+ 1	+ 66.7 - 33.3	+ 83.3 - 16.7
2.2	heavy	- 1	+ 1	+ 66.7 - 33.3	+ 1
2.3	0	+ 25 - 15	+ 1	+ 33.3 - 66.7	+ 1
2.4	straight	+ 1	+ 1	+ 1	+ 83.3 - 16.6
3.1					
3.2					
3.3					
4.1					
4.2					
4.3					
4.4					



5.1	pred. straight	- 1	+ 50 - 50	+ 50 - 50	+ 33.3 - 66.7
5.2	pred. step	- 1	+ 80 - 20	- 1	+ 33.3 - 66.7
	+	+ 3	+ 6.3	+ 4.17	+ 5.33
Total	-	- 4	- .7	- 2.83	- 1.67
	+	+ 43	+ 90	+ 60	+ 76
%	-	- 57	- 10	- 40	- 24
Score		- 14	+ 80	+ 20	+ 52

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:  
Highly Probable + 80 - Min. Rub/Buffer Hammerstone



2.4 Summary of Behavior Units (Morpho-Units) Identified on Artifact, C02082 (Jessup)

Main Scar #	Edge Unit Scar #	Rating on Scoring Scale	Final +/- Score	Behavior Unit	Experimental Control Specimen
021	Edge Unit 1	Possible	+ 50	Mod./Sub. Perc. Thin Hammerstone	AB16-17(a)
		Possible	+ 58	Mod. Shear Shape with P.F.	AB6-13(a)
041		Possible	+ 50	Mod./Sub. Perc. Thin Hammerstone	AB16-17(a)
032		Possible		Mod. Perc. Shape Hammerstone	AB3-17
R2	Edge Unit 2	Possible	+ 48	Mod./Sub. Percussion Thin with Hammerstone	AB16-17(a)
R3		Possible	+ 42	Mod./Sub. Percussion Thin with Hammerstone	AB16-17(a)
R20		Possible	+ 58	Mod. Percussion Shape Hammerstone	AB3-17
		Highly Probable	+ 80	Min. Rub/Buffer Hammerstone	AB10-1(a)





### 3.0 Interpretation of Behavior (Technological) Units, C02082

#### (a) Transforming Behavior Units into Production Units:

#### 3.1 Function of Percussion Thinning/Shaping Units (moderate to very substantial size scars on specimen)

- (a) Mod./Sub. Percussion Thin with Hammerstone: Thinning or face paring was also accomplished with a hammerstone (scars 021, 041, R2, R3). Production Unit Code is 40:3/4, 41, 41.
- (b) Moderate Percussion Shape with Hammerstone: The shape units were used for margin moving (i.e., to control its outline form rather than having thinning as the primary objective). Some of the shaping flakes may be thinning flakes as these are also present (see below). Production Unit Code is 33:4, 42, 41.

#### 3.2 Function of Pressure Thinning/Shaping Units (minimal to substantial size scars on specimen)

There are no pressure flaking behavior units on this prehistoric artifact.

#### 3.3 Function of Edge Units (minimal to very minimal size scars on specimen)

- (a) Minimum to Moderate Shear Shape with Pressure Flaker: This unit was used (see edge unit 1) to straighten, center, and reduce the edge. Edge straightening was undertaken by smoothing out the flat curved notches left by percussion work. Shearing is accomplished by moving the tip of the pressure flaker across the edge of the artifact in a twisting motion. Production Unit Code is 23/24/25:2/4, 22, 31.
- (b) Minimum Rub/Buffer with Hammerstone: Rub buffet involves edge dulling achieved by rubbing the edge of the artifact, while at the same time, dragging the tool with minimal force. This removal of little, flat (often square ended) flakes blunts or rounds the edge so it will not crush easily when used as a platform. An alternative purpose would be to smooth the edge (see edge unit 2). Production Unit Code is 20:2, 12, 41.
- (c) Hypothetical Unit - Moderate Percussion Thin with Hammerstone: Due to overlapping behavior unit and scars, it was not possible to code this unit directly. The hammerstone work scored a + 52 along with the hammerstone rub/buffet (see coding of edge unit #2). Such thinning units are used for margin contouring which is accomplished by removing short, flat flakes on artifact margins to lessen the edge angle. The edge would be subsequently strengthened if this was followed by the rub/buffet as coded. Production Unit Code for



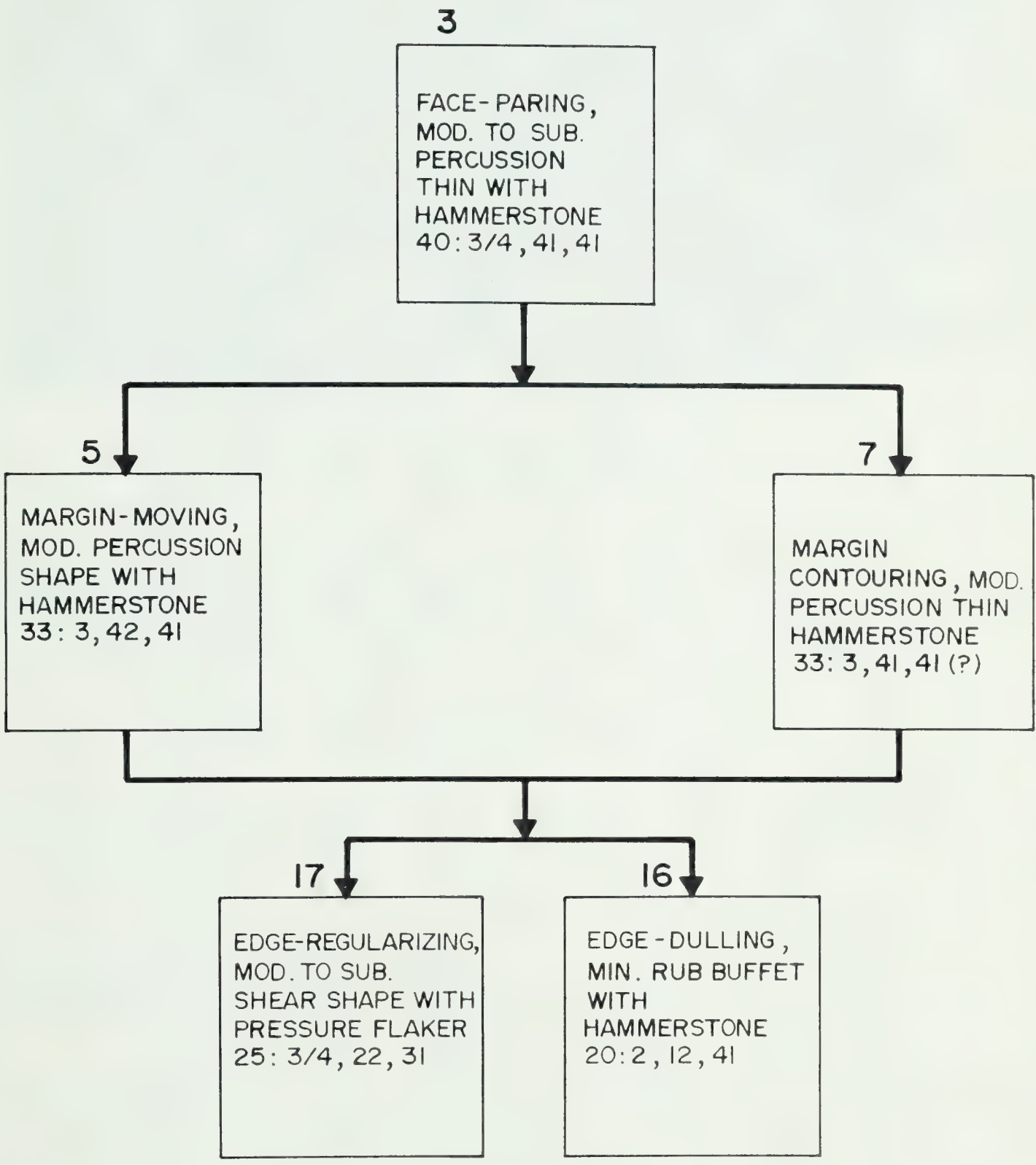


minimal hammerstone thinning used for margin contouring is 33:3,  
41, 41.



(b) Reconstructing Sequencing of Production Units: C02082

3.4 Flow Diagram of Production Units (below)





### 3.5 Description and Discussion of Technological Grammar Found on Artifact

This prehistoric biface was manufactured from a flake core (scar R26 exhibits the original core surface). The flake core was shaped, utilizing substantial percussion face paring flakes with a hammerstone followed by moderate margin moving percussion shaping. This initial percussion work shaped the bi-pointed specimen and thinned it to a reasonable thickness, but not to a finished state. In order to undertake the final thinning work the edge was prepared by means of minimal shear shaping with a pressure flaker (see edge unit 1) which straightened, centered and strengthened the edge. Other edges (edge unit 2) may have been too thick for shearing (i.e., scar 015) and instead, a minimum percussion thin with hammerstone was used for margin contouring (i.e., removing short flat flakes on the artifact margin to reduce the edge angle). This was followed by a minimum rub/buffet with the hammerstone to blunt or round the edge and strengthen it. Subsequent to this work, one of the finishing thinning flakes (possibly 09/R18) was too powerful and caused a bilateral transverse fracture which broke the artifact in half causing it to be abandoned.





DdGw-2 ————— CO 2082

OBVERSE FACE

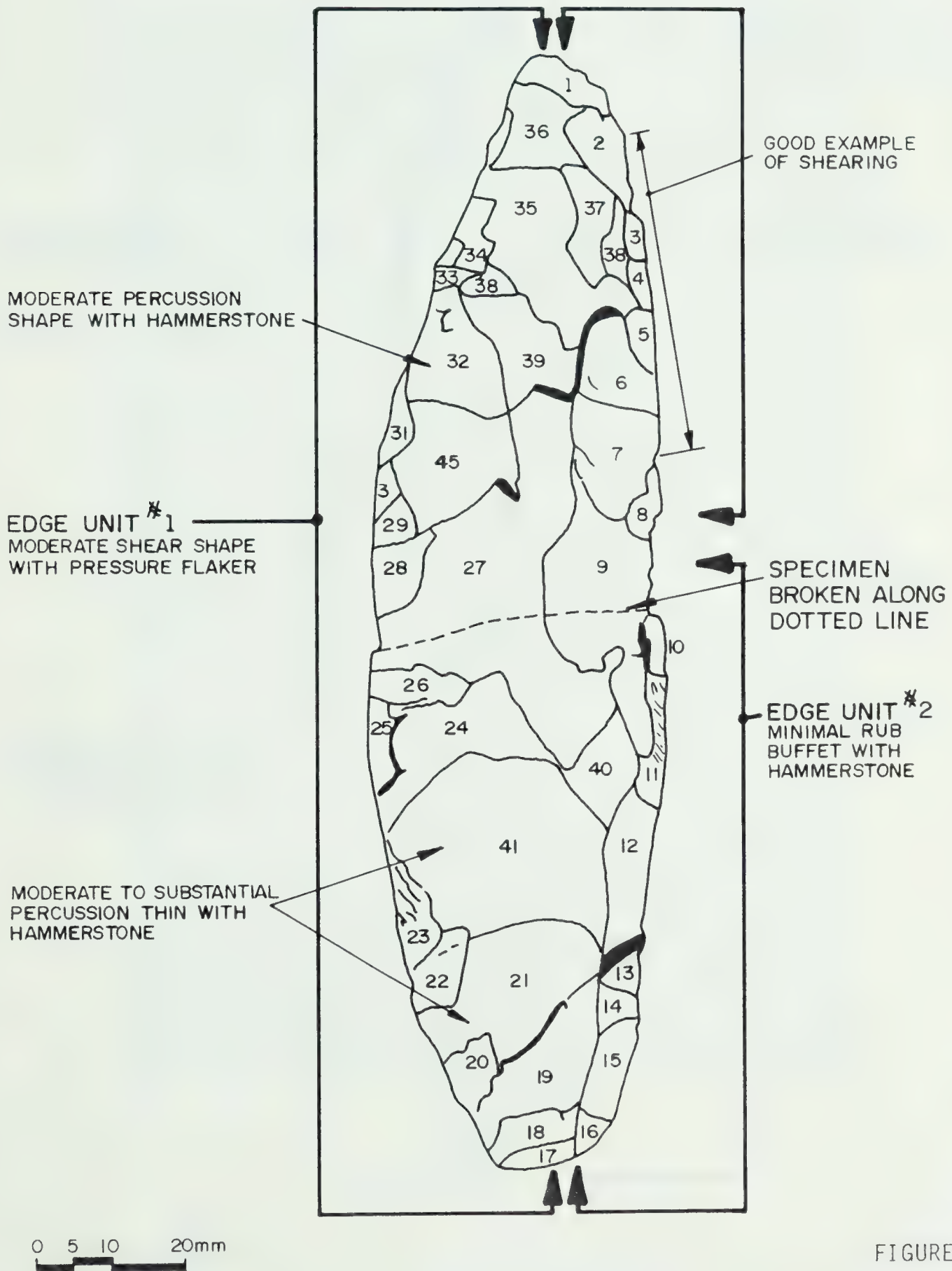


FIGURE 50



REVERSE FACE

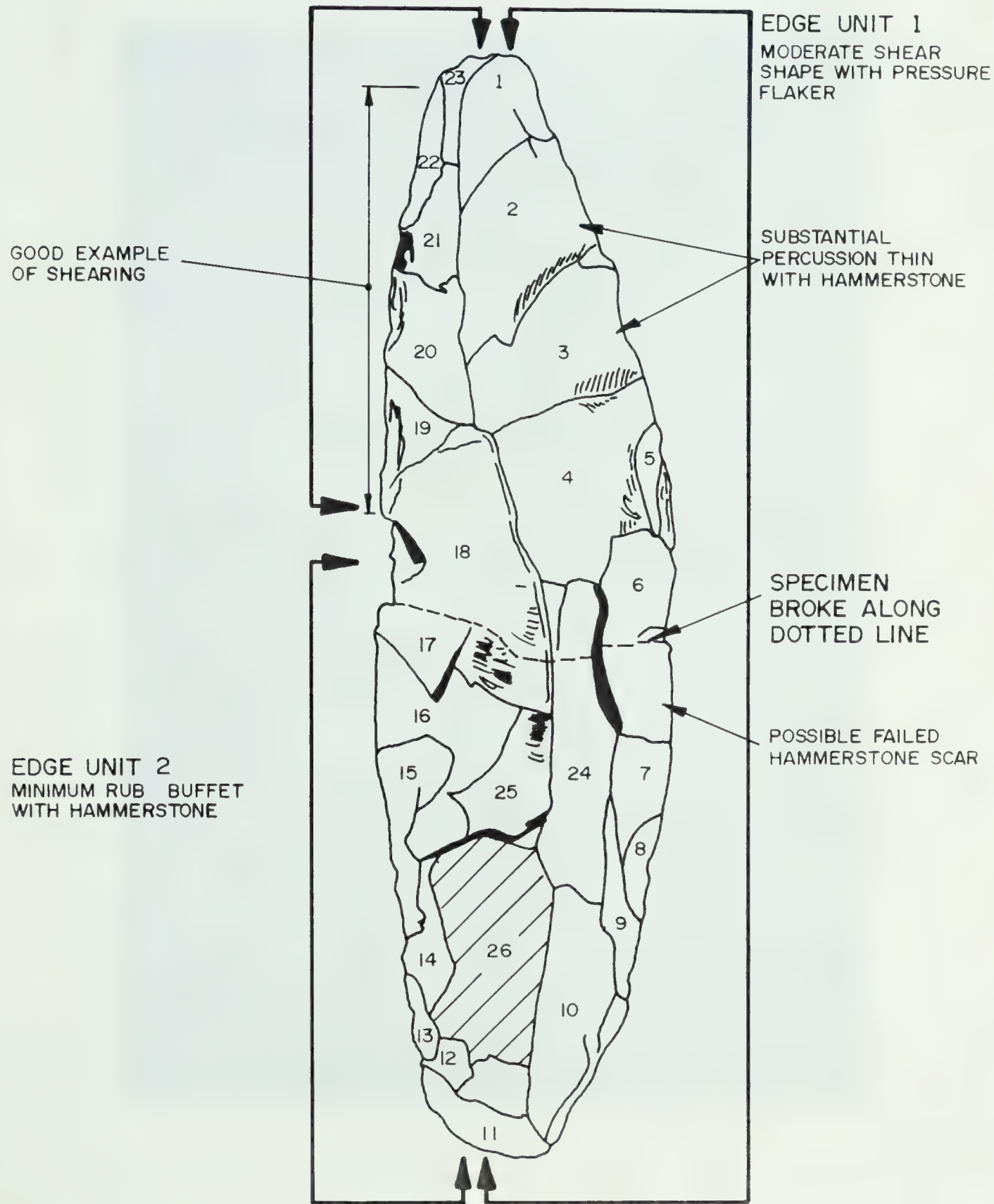


FIGURE 51





Plate 60. Prehistoric Artifact C02082, Obverse Face.







Plate 61. Prehistoric Artifact C02082, Reverse Face.





Table 68: Form for Coding and Interpreting Prehistoric Artifacts

1.0 Prehistoric Artifact Identification

1.1 Artifact Face: Obverse and Reverse

1.2 Prehistoric Specimen Provenience: Jessup Site, DdGw-2

1.3 Specimen Catalogue #: C02070

1.4 Photographic Plate Identification: Roll 4, B4, #7

1.5 Standard Artifact Description:

1.6 Raw Material: Welded Tuff

1.7 Shape/Artifact Class: Biface

1.8 Flaking (Bifacial/Unifacial):

1.9 Metric Size: length - 9.31 cm  
width - 4.24 cm  
thickness - .94 cm

1.10 Form/Morphology Description:

This specimen comprises a broad bifacial tool with a broad but shallow convex to straight base with rounded corners. During final thinning the specimen broke bilaterally and has been glued back together for analysis. It appears that it may have been manufactured from a flake core as a small portion of the original surface remains on the obverse face and an original detachment platform on the base of the flake core.



## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C02070	Main Flake Scar # 015	Edge Treatment on Same Scar	Notes
1.1 Scar Size	very sub.	minimal (1)	1. Edge Unit 2 - scars 11-13 obverse face, scars 12-19 reverse face.
2.3 Edge Sharpness		sharp	
2.2 Margin Damage		heavy	
2.3 Microflakes		0	
2.4 Proximal Edge Morphology		straight with convex project.	
3.1 Negative Bulb of Force	indistinct		
3.2 Bulb to Scar Transition Angle	gradual		
3.3 Flake Thickness	thin		
4.1 Presence or Absence of Ribs	present		
4.2 Distinctiveness of Ribs	indistinct		
4.3 Rib Spacing And Distribution	rel. far apart & evenly dist. (2)		
4.4 Tearing	light		
5.1 Scar Shape at Distal Edge	rounded	straight	
5.2 Scar Termination at Distal Edge	feather and step	feather	



## 2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar 015, C02070

	Prehistoric C02070 Scar 015	AB16-7(a) Mod./Sub. Perc. Thin Hammerstone	AB5-9(a) Mod. Perc. Thin Billet	AB7-10 Sub. Perc. Thin Billet	AB11-11 Sub. Indirect Perc.
1.1	very sub.	+ 1	+ 1	+ 1	+ 1
2.1					
2.2					
2.3					
2.4					
3.1	indistinct	+ 1	+ 80 - 20	+ 75 - 25	+ 66.7 - 33.3
3.2	gradual	+ 1	+ 80 - 20	+ 75 - 25	+ 1
3.3	thin	+ 80 - 20	+ 80 - 20	+ 50 - 50	+ 1
4.1	present	+ 80 - 20	+ 20 - 80	+ 50 - 50	+ 33.3 - 66.7
4.2	indistinct	+ 1	+ 1	+ 1	+ 1
4.3	rel. far apart evenly dist.	+ 1	- 1	- 1	+ 1
4.4	light	+ 40 - 60	+ 20 - 80	+ 25 - 75	+ 33.3 - 66.7





5.1	rounded	+ 40 - 60	+ 40 - 60	+ 50 - 50	+ 33.3 - 66.7
5.2	feather & step	+ 1	+ 1	+ 1	+ 50 - 50
<hr/>					
Total	+	+ 8.4	+ 6.2	+ 6.25	+ 7.17
	-	- 1.6	- 3.8	- 3.75	- 2.83
<hr/>					
%	+	+ 84	+ 62	+ 63	+ 72
	-	- 16	- 38	- 37	- 28
<hr/>					
Score		+ 68	+ 24	+ 26	+ 44
<hr/>					

### 2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Highly Probable + 68 - Mod./Sub. Perc. Thin Hammerstone

N.B. Some very faint ribs start at impact point (necessary to rotate specimen under light in order to see ribs).



2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar, C02070, Edge Unit #2 (scar sheet 015)

	Prehistoric C02070 Edge Unit 2	AB13-15		AB15-18(b)		AB3-17		AB16-17(b)		AB9-5(b)	
		Min. Press.	Shape with P.F.	Min. Perc.	Shape Billet	Min. Perc.	Hammerstone	Min. Perc.	Thin Hammerstone	Min. Press.	Thin with P.F.
1.1	minimal	+ 1		+ 1		+ 1		+ 1		+ 1	
2.1	sharp	+ 1		+ 1		+ 1		+ 1		+ 1	
2.2	light	+ 1		- 1		- 1		- 1		+ 17 - 83	
2.3	0	+ 1		+ 20 - 80		+ 1		+ 50 - 50		+ 1	
2.4	straight or U-shaped	+ 1		+ 1		+ 33.3 - 66.7		+ 1		+ 1	
3.1											
3.2											
3.3											
4.1											
4.2											
4.3											
4.4											



5.1	straight	+ 50 - 50	+ 80 - 20	+ 1	+ 50 - 50	+ 58.3 - 41.7
5.2	feather	+ 88 - 12	+ 80 - 20	+ 33.3 - 66.7	+ 83.4 - 16.6	+ 41.6 - 58.4
	+	+ 6.38	+ 4.8	+ 4.33	+ 4.49	+ 5.17
Total		-	- 2.2	- 2.67	- 2.51	- 1.87
	+	+ 91	+ 69	+ 62	+ 64	+ 74
	-	- 9	- 31	- 38	- 36	- 26
Score		+ 82	+ 38	+ 24	+ 28	+ 48

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Highly Probable + 82 - Minimum Pressure Shape with P.F.



## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C02070	Main Flake Scar # 019	Edge Treatment on Same Scar	Notes
1.1 Scar Size	moderate	(1) very min. to minimal	1. Edge Unit 3 - scars 14-23 obverse face, scars 1-10 reverse face.
2.1 Edge Sharpness		sharp	
2.2 Margin Damage		0	
2.3 Microflakes		heavy	
2.4 Proximal Edge Morphology		irreg. edge, convex projections	
3.1 Negative Bulb of Force	indistinct		
3.2 Bulb to Scar Transition Angle	gradual		
3.3 Flake Thickness	thin		
4.1 Presence or Absence of Ribs	0		
4.2 Distinctiveness of Ribs	0		
4.3 Rib Spacing And Distribution	0		
4.4 Tearing	light		
5.1 Scar Shape at Distal Edge	straight	rounded straight	
5.2 Scar Termination at Distal Edge	step	feather/ step	





2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar 019, C02070

	Prehistoric C02070 Scar 019	AB16-7(a) Mod./Sub. Perc. Thin Hammerstone	AB5-9(b) Mod. Perc. Thin Billet	AB8-6 Sub. Press. Thin P.F.
1.1	moderate	+ 1	+ 1	+ 1
2.1				
2.2				
2.3				
2.4				
3.1	indistinct	+ 1	+ 80 - 20	+ 1
3.2	gradual	+ 1	+ 80 - 20	+ 1
3.3	thin	+ 80 - 20	+ 80 - 20	+ 1
4.1	0	+ 20 - 80	+ 80 - 20	+ 50 - 50
4.2	n/a	n/a	n/a	n/a
4.3	n/a	n/a	n/a	n/a
4.4	light	+ 40 - 60	+ 20 - 80	+ 25 - 75



5.1	straight	+ 60 - 40	+ 80 - 20	+ 75 - 25
5.2	step	+ 60 - 40	+ 60 - 40	+ 25 - 75
Total				
+		+ 5.6	+ 5.8	+ 5.75
-		- 2.4	- 2.2	- 2.25
+		+ 70	+ 73	+ 72
%				
-		- 30	- 27	- 28
Score				
		+ 40	+ 46	+ 44

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Possible + 44 - Sub. Press. Thin with P.F.

Due to the apparent small platform and bulb of force, the pressure unit was selected, although all scores are very close. Pressure work along the edge is also present with better morphology on the reverse face.



2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar, C02070, Edge Unit 3 (coded on scar form 019)

	Prehistoric C02070 Edge Unit 3	AB9-5(a)	AB6-13(b)	AB2-2(b)	AB16-17(b)	AB5-9(a)
		Mod. Press. Thin P.F.	Mod. Shear Shape P.F.	Min. Press. Rub with P.F.	Min. Perc. Thin Hammerstone	Min. Perc. Thin Billet
1.1	very minimal to minimal	+ 1	+ 1	+ 1	+ 1	+ 1
2.1	sharp	+ 1	+ 1	+ 1	+ 1	+ 1
2.2	0	+ 78 - 22	- 1	- 1	+ 34 - 66	- 1
2.3	heavy	- 1	+ 1	+ 1	+ 50 - 50	+ 1
2.4	follows existing edge (code as straight) some U-shaped notches	+ 1	+ 1	+ 84 - 16	+ 1	+ 1
3.1						
3.2						
3.3						
4.1						
4.2						









2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

2.1 Scar Coding Form for Individual Flake Scars

Artifact # C02070	Main Flake Scar # R7	Edge Treatment on Same Scar	Notes
1.1 Scar Size	moderate	(1)	1. Edge Unit 3 - see scar 019.
2.1 Edge Sharpness			
2.2 Margin Damage			
2.3 Microflakes			
2.4 Proximal Edge Morphology			
3.1 Negative Bulb of Force	indistinct		
3.2 Bulb to Scar Transition Angle	gradual		
3.3 Flake Thickness	thin		
4.1 Presence or Absence of Ribs	present		
4.2 Distinctiveness of Ribs	indistinct		
4.3 Rib Spacing And Distribution	rel. far apart evenly dist.		
4.4 Tearing	light		
5.1 Scar Shape at Distal Edge	rounded		
5.2 Scar Termination at Distal Edge	feather		



## 2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar R7, C02070

	Prehistoric C02070 Scar R7	AB16-7(a)		AB3-17		AB5-9(a)		AB15-18(a)		AB8-6	
		Mod./Sub.	Perc.	Mod.	Perc.	Mod.	Perc.	Mod.	Perc.	Sub.	Perc.
		Thin Hammerstone	Shape Hammer.	Thin Billet	Shape Billet	Thin with P.F.					
1.1	moderate	+ 1	+ 1	+ 1	+ 1	+ 1					
2.1											
2.2											
2.3											
2.4											
3.1	indistinct	+ 1	+ 1	+ 80 - 20	+ 85.72 - 14.28	+ 1				+ 1	
3.2	gradual	+ 1	+ 1	+ 80 - 20	+ 1	+ 1				+ 1	
3.3	thin	+ 80 - 20	+ 1	+ 80 - 20	+ 85.72 - 14.28	+ 1				+ 1	
4.1	present	+ 80 - 20	+ 33.3 - 66.7	+ 20 - 80	+ 14.28 - 85.72	+ 50 - 50					
4.2	indistinct	+ 1	+ 1	+ 1	+ 1	+ 1				+ 1	
4.3	rel. far apart & evenly dist.	+ 1	+ 1	- 1	- 1	- 1				- 1	
4.4	light	- 1	+ 33.3 - 66.7	+ 20 - 80	+ 14.28 - 85.72	+ 25 - 75					



5.1	rounded	+ 40 - 60	- 1	+ 40 - 60	+ 42.9 - 57.1	+ 75 - 25
5.2	feather	+ 83.3 - 16.7	+ 33.3 - 66.7	+ 50 - 50	+ 71.4 - 28.6	+ 75 - 25
Total		+ 7.83	+ 7	+ 5.7	+ 6.14	+ 7.25
		- 2.17	- 3	- 4.3	- 3.86	- 2.75
		+ 78	+ 70	+ 57	+ 61	+ 72
		- 21	- 30	- 43	- 39	- 28
Score		+ 57	+ 40	+ 14	+ 22	+ 44

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Possible + 57 - Mod./Sub. Perc. Thin Hammerstone  
(Platform area is too large for pressure flaking)





## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C02070	Main Flake Scar # R8	Edge Treatment on Same Scar	Notes
1.1 Scar Size	sub.	(1)	1. Edge Unit 3 (see scar 019)
2.1 Edge Sharpness			2. Natural bedding planes in raw material preclude coding of ribs.
2.2 Margin Damage			
2.3 Microflakes			
2.4 Proximal Edge Morphology			
3.1 Negative Bulb of Force	indistinct		
3.2 Bulb to Scar Transition Angle	gradual		
3.3 Flake Thickness	thin		
4.1 Presence or Absence of Ribs	present		
4.2 Distinctiveness of Ribs	indistinct		
4.3 Rib Spacing And Distribution	n/a (2)		
4.4 Tearing	heavy		
5.1 Scar Shape at Distal Edge	rounded		
5.2 Scar Termination at Distal Edge	feather/ step		



2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar R8, C02070

	Prehistoric C02070 Scar R8	AB16-7(a) Mod. Sub. Perc. Thin Hammerstone	AB7-10 Sub. Perc. Thin Billet	AB11-11 Sub. Indirect Perc. Billet/Billet
1.1	substantial	+ 1	+ 1	+ 1
2.1				
2.2				
2.3				
2.4				
3.1	indistinct	+ 1	+ 75 - 25	+ 66.7 - 33.3
3.2	gradual	+ 1	+ 75 - 25	+ 1
3.3	thin	+ 1	+ 50 - 50	+ 1
4.1	present	+ 80 - 20	+ 50 - 50	+ 33.3 - 66.7
4.2	indistinct	+ 1	+ 1	+ 1
4.3	n/a	n/a	n/a	n/a
4.4	heavy	- 1	- 1	- 1



5.1	rounded	+ 40 - 60	+ 50 - 50	+ 33.3 - 66.7
5.2	feather/ step	+ 1	+ 1	+ 50 - 50
Total	+	+ 7.2	+ 6	+ 5.83
	-	- 1.8	- 3	- 3.17
%	+	+ 80	+ 67	+ 65
	-	- 20	- 33	- 35
Score		+ 60	+ 34	+ 30

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Possible + 60 - Mod./Sub. Perc. Thin Hammerstone





2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

2.1 Scar Coding Form for Individual Flake Scars

Artifact # C02070	Main Flake Scar # R26	Edge Treatment on Same Scar	Notes
1.1 Scar Size	moderate	minimal (1)	1. Edge Unit 1 - reverse face scars 20-29, obverse face scars 1-10.
2.1 Edge Sharpness		sharp	
2.2 Margin Damage		light	
2.3 Microflakes		light	
2.4 Proximal Edge Morphology		straight and U-shaped notches	
3.1 Negative Bulb of Force	indistinct		
3.2 Bulb to Scar Transition Angle	gradual		
3.3 Flake Thickness	thin		
4.1 Presence or Absence of Ribs	0		
4.2 Distinctiveness of Ribs	n/a		
4.3 Rib Spacing And Distribution	n/a		
4.4 Tearing	0		
5.1 Scar Shape at Distal Edge	rounded	rounded straight	
5.2 Scar Termination at Distal Edge	feather	feather/ step	



## 2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar R26, C02070

	Prehistoric C02070 Scar R26	AB3-17 Mod. Perc. Shape Hammerstone	AB15-18(a) Mod. Perc. Shape Billet	AB8-6 Sub. Press. Thin P.F.
1.1	moderate	+ 1	+ 1	+ 1
2.1				
2.2				
2.3				
2.4				
3.1	indistinct	+ 1	+ 85.72 - 14.28	+ 1
3.2	gradual	+ 1	+ 80 - 20	+ 1
3.3	thin	+ 1	+ 85.12 - 14.28	+ 1
4.1	0	+ 33.3 - 66.7	+ 85.72 - 14.28	+ 50 - 50
4.2	n/a	n/a	n/a	n/a
4.3	n/a	n/a	n/a	n/a
4.4	0	+ 66.7 - 33.3	+ 85.72 - 14.28	+ 75 - 25



5.1	straight	+ 1	+ 57.1 - 42.9 + 42.9 - 57.1	+ 25 - 75 + 75 - 25
5.2	feather	+ 33.3 - 66.7	+ 71.4 - 28.6	+ 75 - 25
	+	+ 6.33	+ 6.51	+ 6.25
Total	-	- 1.67	- 1.49	- 1.75
	+	+ 79	+ 81	+ 78
%	-	- 21	- 19	- 22
Score		+ 58	+ 62	+ 56

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Possible + 58 - Moderate Percussion Shape Hammerstone

This is a shaping flake, and due to the presence of other hammerstone percussion on both faces the hammerstone behavior unit is selected, although the scores are very close. There is a possibility it could be a substantial pressure flake.



2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar, C02070, Edge Unit 1 (coded on Scar R26)

	Prehistoric C02070 Edge Unit 1	AB2-2(b)		AB2-2(c)		AB14-16(b)		AB13-15		AB6-13(a)	
		Min. Press. Rub P.F.		Min. Platform Isolating P.F.		Min. Perc. Shape Hammer.		Min. Press. Shape P.F.		Min. Shear Shape P.F.	
1.1	minimal	+ 1		+ 1		+ 1		+ 1		+ 1	
2.1	sharp	+ 1		+ 1		+ 16.7 - 83.3		+ 1		+ 33.3 - 66.7	
2.2	light	- 1		- 1		- 1		+ 18.75 - 81.25		+ 16.7 - 83.3	
2.3	light	- 1		+ 42.85 - 57.15		- 1		- 1		- 1	
2.4	U-shaped notches and some straight	+ 1		+ 1		+ 1		+ 1		- 1	
3.1											
3.2											
3.3											
4.1											
4.2											
4.3											
4.4											





5.1	rounded & straight	+ 1	+ 86 - 14	+ 1	+ 1	+ 50 - 50
5.2	feather/step	+ 1	+ 1	+ 1	+ 1	+ 50 - 50
<hr/>						
Total	+	+ 5	+ 5.29	+ 4.17	+ 5.19	+ 2.50
	-	- 2	- 1.71	- 2.83	- 1.81	- 4.50
<hr/>						
%	+	+ 71	+ 76	+ 60	+ 74	+ 36
	-	- 29	- 24	- 40	- 26	- 64
<hr/>						
Score		+ 42	+ 52	+ 20	+ 48	- 28
<hr/>						

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Possible + 52 - Min. Platform isolating with P.F. and  
Possible + 42 - Min. Press. Rub with P.F.

Both of the above units are present as part of edge unit # 1 (the platform isolating is on the obverse face).



2.4 Summary of Behavior Units (Morpho-Units) Identified on Artifact, C02070 (Jessup)

Main Scar #	Edge Unit Scar #	Rating on Scoring Scale	Final +/- Score	Behavior Unit	Experimental Control Specimen
015		Highly Probable	+ 68	Mod./Sub. Perc. Thin Hammerstone	AB16-7(a)
	Edge Unit 2	Highly Probable	+ 82	Min. Pressure Shape with Pressure Flaker	AB13-15
019		Possible	+ 44	Substantial Pressure Thin with Pressure Flaker	AB8-6
	Edge Unit 3	Possible	+ 66	Min. Press Rub/P.F.	AB2-2(b)
R7		Possible Possible	+ 57 + 44	Sub./Mod. Perc. Thin with Hammerstone Sub. Press. Thin with P.F.	AB16-7(a) AB8-6
R8		Possible	+ 60	Mod./Sub. Perc. Thin with Hammerstone	AB16-7(a)
R26		Possible	+ 58	Moderate Percussion Shape Hammerstone	AB3-17
	Edge Unit 1	Possible Possible	+ 52 + 42	Min. Platform Isolating with P.F. Min. Pressure Rub with P.F.	AB2-2(c) AB2-2(b)



### 3.0 Interpretation of Behavior (Technological) Units

#### (a) Transforming Behavior Units into Production Units:

### 3.1 Function of Percussion Thinning/Shaping Units (moderate to very substantial size scars on specimen)

- (a) Moderate to Substantial Percussion Thin with Hammerstone: Face paring removes flakes which are a minimum of twice the size of the platform at the artifact edge which has the effect of thinning the specimen rather than moving in the overall outline shape or outer edge. Production Unit Code is 40:4, 51, 41.
- (b) Moderate Percussion Shape with Hammerstone: These flakes differ from the larger hammerstone face paring flakes in that they are used to control the overall shape of the specimen during the reduction process through margin moving. Production Unit Code is 33:3, 42, 41. In some cases the margin moving may have been used to prepare solid platforms on the edge for further substantial face paring.

### 3.2 Function of Pressure Thinning/Shaping Units (minimal to substantial size scars on specimen)

- (a) Minimum Pressure Shape with Pressure Flaker: These margin moving flakes were used on the base (scars R12 to R18) to shape the convex base. Production Unit Code is 33:2, 32, 31.
- (b) Minimum, Moderate and Substantial Pressure Thin with Pressure Flaker: These units were used for face paring and margin contouring (on the tip) to thin the edge angle. Production Unit Codes are 40:2/3/4, 41, 31 and 31:2, 41, 31 (on tip).

### 3.3 Function of Edge Units (minimal to very minimal size scars on specimen)

- (a) Minimum Platform Isolating with Pressure Flaker: This unit may be present on scars 03, 04, 05, and 06 as they most closely resemble the experimental morphology [see experiment AB2-2(c)]. Platform isolating consists of removing small notches on either side of an edge area to be used as a platform for a thinning flake. By isolating the platform in this way, the thinning flake tends to travel inwards further in a more confined scar pattern rather than spreading out. Production Unit Code is 34:2, 32, 31.
- (b) Minimum Pressure Rub with Pressure Flaker: This edge unit is present and has dulled the edge of all of edge unit #3 and the lower portion of edge unit #1 and perhaps, to a very minimal extent, the base (edge unit 2). This behavior unit thickens and strengthens the edge and allows for the edge to be more effectively



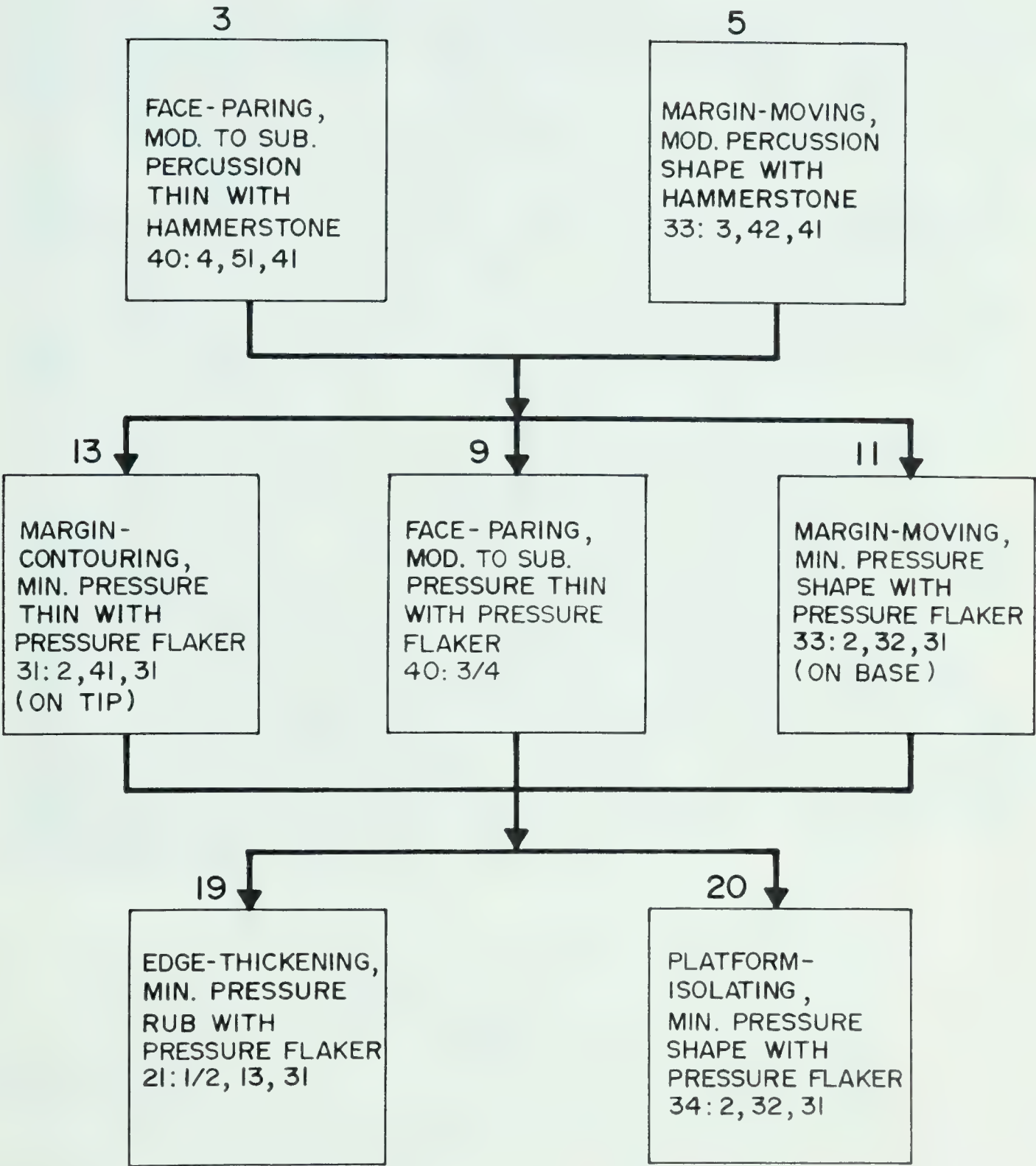


used as a platform for further flake removals. Production Unit  
Code is 21:1/2, 13, 31.



(b) Reconstructing Sequencing of Production Units: C02070

3.4 Flow Diagram of Production Units (below)





### 3.5 Description and Discussion of Technological Grammar Found on Artifact

Manufactured from a flake core, this artifact still has the original flake core platform intact on the obverse face (see scar 013) and several original flake core surfaces remain, namely scars 030, 031, 032 and R25. The core was face pared using moderate to substantial percussion thinning flakes with a hammerstone. Shaping or margin moving was accomplished by means of moderate percussion flaking with a small pebble (small hammerstone). Some of these shaping flakes also overlap into thinning flakes and are concentrated along the right lateral margin of the obverse face and the left lateral margin of the reverse face and were used to trim the edges back and set up solid platforms. One of the thinning or shaping flake removals had excessive force or an improperly prepared platform (possibly scar 07 which is a substantial hammerstone thinning scar) and subsequently caused a bilateral transverse snap, breaking the artifact in half. Prior to this breakage and abandonment of the specimen, edge preparation work had been completed to prepare the margin for further thinning treatments. These edge units consist of a notable one in the form of minimum platform isolating with a pressure flaker. Good examples of this behavior unit are scars 03, 04, 05 and 06, showing the characteristic U-shaped notches placed on either side of a potential platform area. By isolating the platform in this way, a more compact and longer thinning flake can be detached travelling inwards rather than sideways along the margin. This helps to control the thinning process. A second edge unit was a minimum pressure rub with a pressure flaker. This unit was used to dull the edge by removing overly thin material and also helped to blunt and strengthen the edge for further flaking activity. The behavior unit is present in all of edge unit #3 and the lower portions of edge unit #1 and, as well, minimally on the base overlying edge unit 2. Edge unit 2, the final behavior unit here, comprises a minimum pressure shaping with an antler pressure flaker. The unit has been applied in one small area (scars R12 to R18) on the base of the artifact. The unit is applied unifacially to the platform of the original flake core with the obverse side being used as the platform to remove flakes on the reverse side. The purpose was to move the margin in to form a convex base.



DdGw-2 CO 2070

OBVERSE FACE

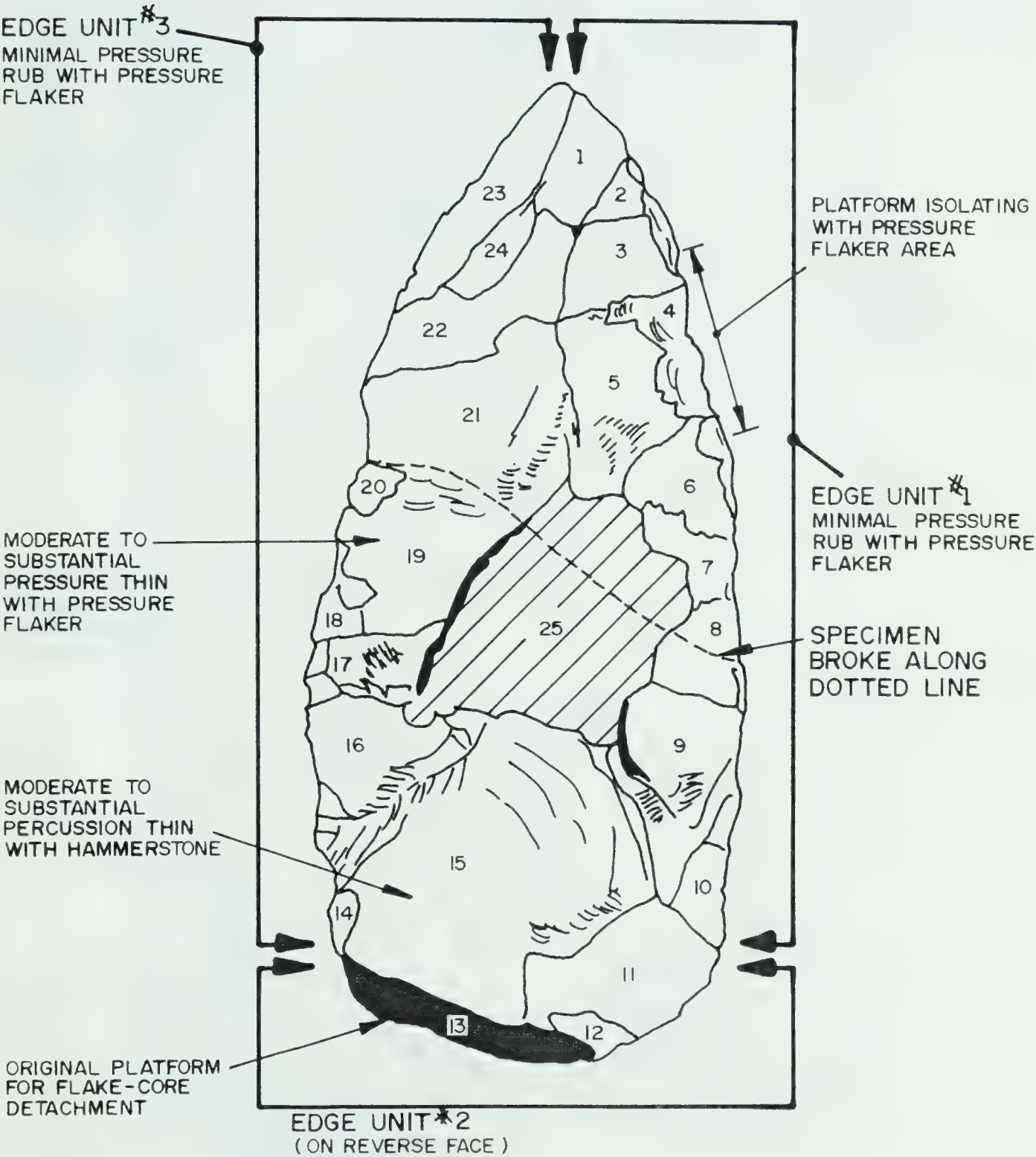


FIGURE 52





REVERSE FACE

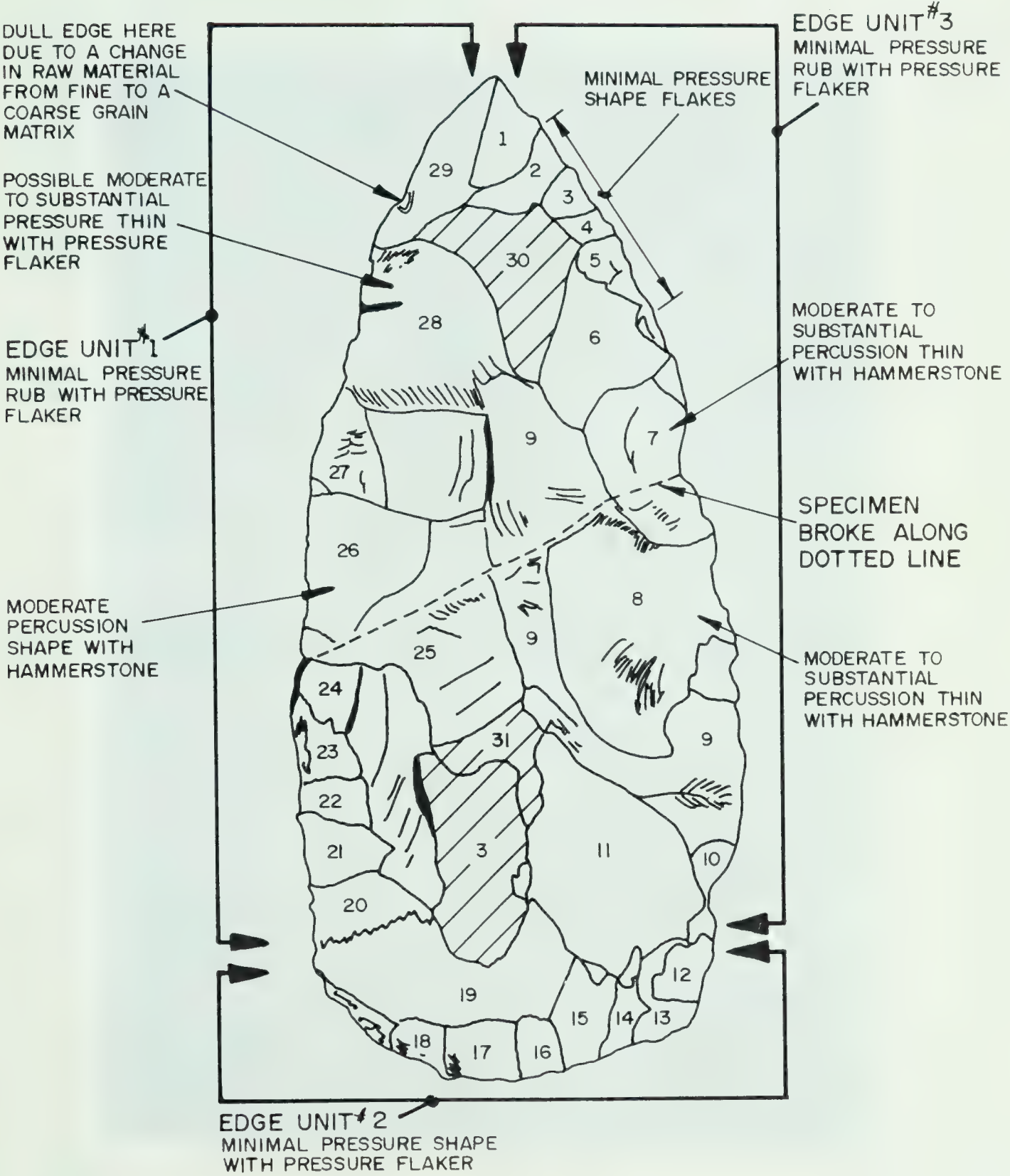


FIGURE 53





Plate 62. Prehistoric Artifact C02070, Obverse Face.





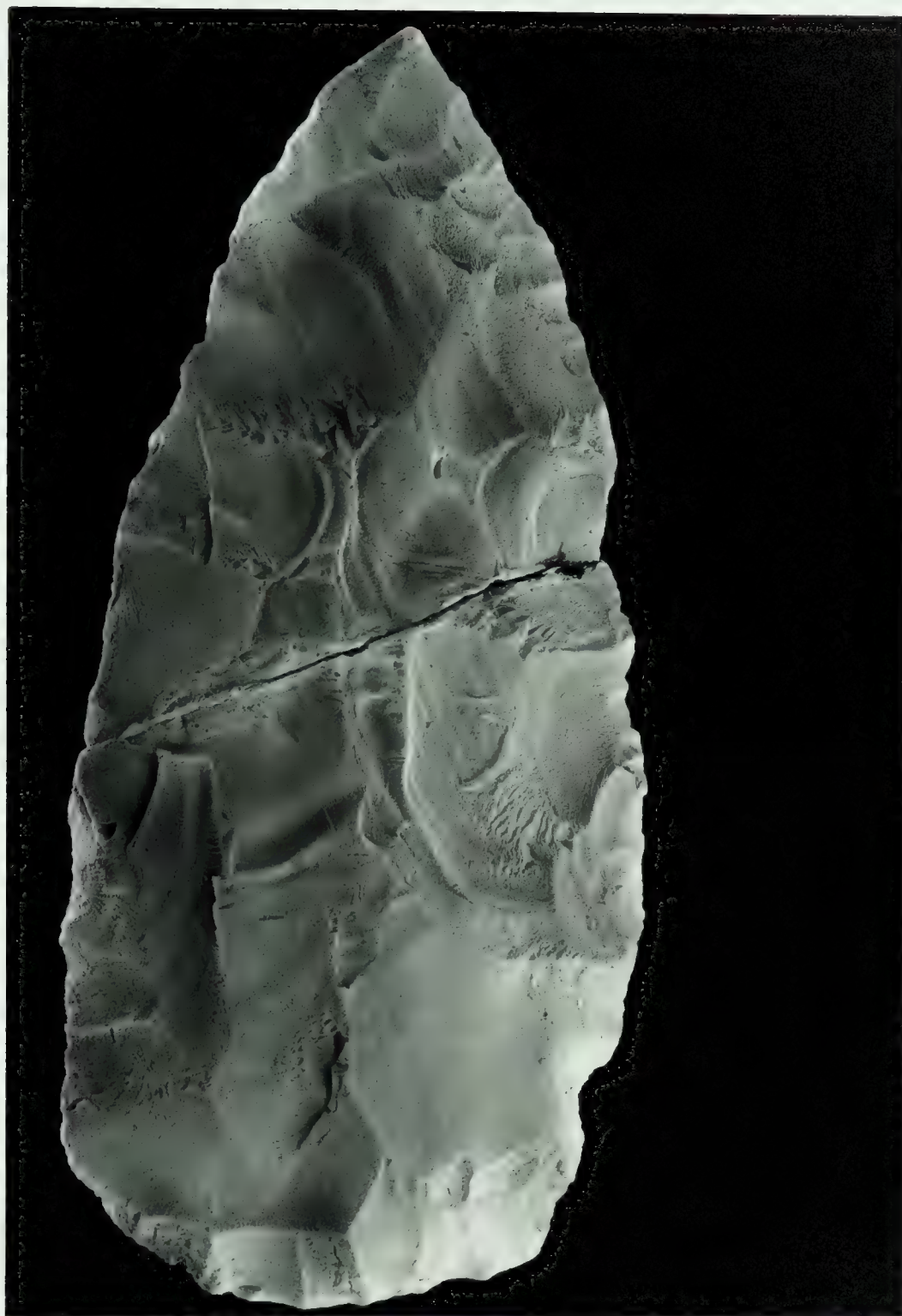


Plate 63. Prehistoric Artifact C02070, Reverse Face.





Table 69: Form for Coding and Interpreting Prehistoric Artifacts

- 1.0 Prehistoric Artifact Identification
  - 1.1 Artifact Face: Obverse and Reverse
  - 1.2 Prehistoric Specimen Provenience: DdGw-2 (Jessup Site)
  - 1.3 Specimen Catalogue #: C02071
  - 1.4 Photographic Plate Identification: Roll 2, B2, #21A and 27A
  - 1.5 Standard Artifact Description:
  - 1.6 Raw Material: Welded Tuff
  - 1.7 Shape/Artifact Class: Biface
  - 1.8 Flaking (Bifacial/Unifacial): Bifacial
  - 1.9 Metric Size: length - 10.88 cm  
width - 4.72 cm  
thickness - 1.54 cm
  - 1.10 Form/Morphology Description:

This is a rough preform consisting of a broad ovoid blade with a broad but shallow convex base. It is manufactured from a bifacially worked flake, with the striking platform of the flake preform still present. Unsuccessful thinning at mid section has caused a bilateral traverse fracture snapping the specimen in half. The two sections have been glued back together for analysis.



## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C02071	Main Flake Scar # 03	Edge Treatment on Same Scar	Notes
1.1 Scar Size	very sub. (1)	Min. or very minimal (2)	1. Because of scar size it must be substantial force.  2. All sub. perc. or indirect perc. have curved notches - this one is straight. Therefore, some form of edge treatment is present.
2.1 Edge Sharpness		intermediate	
2.2 Margin Damage		light	
2.3 Microflakes		light	
2.4 Proximal Edge Morphology		straight with convex projections	3. There is a single undulation connected with the flow of force that may be a rib or an undulation.  4. This is a failed scar because it took out too much material.  5. This Edge Unit (#1) covers scars 1-3, 22-23 on obverse face and scars 1-4 on the reverse face (see scar R4).
3.1 Negative Bulb of Force	indistinct		
3.2 Bulb to Scar Transition Angle	gradual		
3.3 Flake Thickness	thick		
4.1 Presence or Absence of Ribs	0 (3)		
4.2 Distinctiveness of Ribs	n/a		
4.3 Rib Spacing And Distribution	n/a		
4.4 Tearing	heavy		
5.1 Scar Shape at Distal Edge	rounded	1/2 straight 1/2 curved	
5.2 Scar Termination at Distal Edge	step/ feather (4)	step/ feather	



2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar 03, Main Scar, C02071

	Prehistoric C02071 Scar 03	AB16-17(a) Mod./Sub. Perc. Thin Hammerstone	AB11-11 Sub. Indirect Percussion	AB7-10 Sub. Perc. Thin Billet
1.1	very sub.	+ 1	+ 1	+ 1
2.1				
2.2				
2.3				
2.4				
3.1	indistinct	+ 1	+ 66.6 - 33.3	+ 75 - 25
3.2	gradual	+ 1	+ 1	+ 75 - 25
3.3	thick	+ 20 - 80	- 1	+ 50 - 50
4.1	0	+ 20 - 80	+ 66.7 - 33.3	+ 50 - 50
4.2	n/a	n/a	n/a	n/a
4.3	n/a	n/a	n/a	n/a
4.4	heavy	- 1	- 1	- 1



5.1	rounded	+ 40 - 60	+ 33.3 - 66.7	+ 50 - 50
5.2	step/ feather	+ 1	+ 1	+ 1
Total				
	+	+ 4.8	+ 4.67	+ 5
	-	- 3.2	- 3.33	- 3
%				
	+	+ 60	+ 58	+ 63
	-	- 40	- 42	- 37
Score				
		+ 20	+ 16	+ 26

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Indeterminate + 20 - Mod./Sub. Perc. Thin Hammerstone

N.B.

This scar is very difficult to code as it represents a failed scar - the flatness and lack of a distinct percussion bulb favour a hammerstone identification.





2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar, C02071, Edge Unit 1 (see note 5) (coded 03)

Prehistoric C02071 Edge Unit 1	AB10-1 Min. Rub/Bufet with Hammerstone	AB10-1 Min. Rub/Bufet Antler Billet	AB6-13(a) Min. Shear Shape with P.F.	AB2-2(c) Min. Platform Isol. with P.F.	AB14-16(b) Min. Perc. Shape Hammer.
1.1	minimal to very min.	+ 1	+ 1	+ 1	+ 1
2.1	intermediate	+ 1	+ 15 - 85	+ 66.6 - 33.3	- 1 + 83.3 - 16.7
2.2	light	- 1	+ 15 - 85	+ 16.7 - 83.3	- 1
2.3	light	- 1	+ 15 - 85	- 1 + 42.85 - 57.15	- 1
2.4	straight with convex projections	+ 1	+ 1	- 1	+ 83.3 - 16.6
3.1					
3.2					
3.3					
4.1					
4.2					
4.3					
4.4					



5.1	1/2 straight 1/2 curved	+ 75 - 25	- 1	+ 50 - 50	+ 85 - 15	+ 33.3 - 66.6
5.2	step/ feather	+ 1	+ 1	+ 1	+ 1	+ 1
Total						
+		+ 4.75	+ 3.45	+ 4.22	+ 3.28	+ 4
-		- 2.25	- 3.55	- 2.67	- 3.72	- 3
%						
+		+ 68	+ 49	+ 62	+ 47	+ 57
-		- 32	- 51	- 38	- 53	- 43
Score						
		+ 36	- 2	+ 24	- 6	+ 14

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Possible + 36 - Min. Rub Buffet/Hammerstone



## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C02071	Main Flake Scar # 021	Edge Treatment on Same Scar	Notes
1.1 Scar Size	medium		
2.1 Edge Sharpness			
2.2 Margin Damage			
2.3 Microflakes			
2.4 Proximal Edge Morphology			
3.1 Negative Bulb of Force	indistinct		
3.2 Bulb to Scar Transition Angle	gradual		
3.3 Flake Thickness	thin		
4.1 Presence or Absence of Ribs	absent		
4.2 Distinctiveness of Ribs	n/a		
4.3 Rib Spacing And Distribution	n/a		
4.4 Tearing	light		
5.1 Scar Shape at Distal Edge	rounded		
5.2 Scar Termination at Distal Edge	feather		





2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar 021, Main Scar, C02071

	Prehistoric C02071 Scar 021	AB16-7(a)		AB3-17		AB5-9(b)		AB15-18(a)	
		Mod./Sub. Perc.	Thin Hammer.	Mod. Perc.	Shape Hammer.	Mod. Perc.	Thin with Billet	Mod. Perc.	Shape/Billet
1.1	medium	+ 1		+ 1		+ 1		+ 1	
2.1									
2.2									
2.3									
2.4									
3.1	indistinct	+ 1		+ 1		+ 80 - 20		+ 85.72 - 14.28	
3.2	gradual	+ 1		+ 1		+ 80 - 20		+ 1	
3.3	thin	+ 80 - 20		+ 1		+ 80 - 20		+ 85.72 - 14.28	
4.1	absent	+ 20 - 80		+ 66.7 - 33.3		+ 80 - 20		+ 85.72 - 14.28	
4.2	n/a	n/a		n/a		n/a		n/a	
4.3	n/a	n/a		n/a		n/a		n/a	
4.4	light	+ 40 - 60		+ 33.3 - 66.7		+ 20 - 80		+ 14.28 - 85.72	



5.1	rounded	+ 40 - 60	- 1	+ 40 - 60	+ 42.9 - 57.1
5.2	feather	+ 40 - 60	+ 33.3 - 67.7	+ 50 - 50	+ 71.4 - 28.6
Total					
+		+ 5.20	+ 5.33	+ 5.30	+ 5.86
-		- 2.80	- 2.67	- 2.70	- 2.14
+		+ 65	+ 67	+ 66	+ 73
%					
-		- 35	- 33	- 34	- 27
Score		+ 30	+ 34	+ 32	+ 46

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Possible + 34 - Moderate Percussion Shape Hammerstone

The thinness and flatness of the flake scar, plus the indistinct percussion bulb, favour a hammerstone identification even though the billet scored slightly higher due to flake termination which, in this case, may be determined by the very steep working face and the smooth original flake core surface.



## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C02071	Main Flake Scar # R4	Edge Treatment on Same Scar	Notes
1.1 Scar Size	very sub.	(2)	1. Attribute 2.1 immediately indicates overlapping technological behaviors as no sub. or mod. percussion flakes leave an intermediate sharp edge.
2.1 Edge Sharpness			
2.2 Margin Damage			
2.3 Microflakes			
2.4 Proximal Edge Morphology			2. Edge Unit 1 - scars 1-4 reverse face and 1-3, 22-23 obverse face (see scar 03).
3.1 Negative Bulb of Force	indistinct		
3.2 Bulb to Scar Transition Angle	gradual		3. The ribs are difficult to discern - some faint ones may be evenly distributed.
3.3 Flake Thickness	thin		
4.1 Presence or Absence of Ribs	present		
4.2 Distinctiveness of Ribs	indistinct		
4.3 Rib Spacing And Distribution	rel. far apart on dist. half (3)		
4.4 Tearing	0		
5.1 Scar Shape at Distal Edge	straight		
5.2 Scar Termination at Distal Edge	step/feather		



## 2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar R4, Main Scar, C02071

	Prehistoric C02071 Main Scar R4	AB7-10 Sub. Perc. Thin Billet	AB11-11 Sub. Indirect Percussion	AB16-7(a) Mod./Sub. Perc. Thin Hammerstone
1.1	very sub.	+ 1	+ 1	+ 1
2.1				
2.2				
2.3				
2.4				
3.1	indistinct	+ 75 - 25	+ 66.6 - 33.3	+ 1
3.2	gradual	+ 75 - 25	+ 1	+ 1
3.3	thin	+ 50 - 50	+ 1	+ 80 - 20
4.1	present	+ 50 - 50	+ 33.3 - 66.7	+ 80 - 20
4.2	indistinct	+ 1	+ 1	+ 1
4.3	rel. far apart on distal 1/2	+ 1	+ 1	- 1
4.4	0	+ 75 - 25	+ 66.6 - 33.3	+ 60 - 40





5.1	straight	- 1	- 1	+ 60 - 40
5.2	step/ feather	+ 1	+ 1	+ 1
Total				
+		+ 7.25	+ 7.67	+ 7.80
-		- 2.75	- 2.33	- 2.20
%				
+		+ 73	+ 77	+ 78
-		- 27	- 23	- 22
Score				
		+ 46	+ 54	+ 56

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Possible + 56 - Mod./Sub. Perc. Thin Hammerstone

If the rib attribute (which is doubtful) were removed, the hammerstone score would be much higher again then the billet.



## 2.0 Coding and Identification of Technological Attribute States Found on Individual Flake Scar(s)

### 2.1 Scar Coding Form for Individual Flake Scars

Artifact # C02071	Main Flake Scar # R10	Edge Treatment on Same Scar	Notes
1.1 Scar Size	substantial	very minimal (1)	1. Edge Unit 2 coded from scars 8-12 reverse face and 9-20 obverse face (see scar 0-18)
2.1 Edge Sharpness		intermediate to dull	
2.2 Margin Damage		heavy	
2.3 Microflakes		heavy	
2.4 Proximal Edge Morphology		straight with convex projections	
3.1 Negative Bulb of Force	indistinct		
3.2 Bulb to Scar Transition Angle	gradual		
3.3 Flake Thickness	thin		
4.1 Presence or Absence of Ribs	present		
4.2 Distinctiveness of Ribs	indistinct		
4.3 Rib Spacing And Distribution	far apart on distal 1/2		
4.4 Tearing	light		
5.1 Scar Shape at Distal Edge	rounded	straight	
5.2 Scar Termination at Distal Edge	feather	step	



2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar R10, C02071

Prehistoric C02071 Scar R10		AB16-7(a) Mod./Sub. Perc. Thin Hammerstone		AB7-10 Sub. Perc. Thin/Billet		AB11-11 Sub. Indirect Percussion	
1.1	substantial	+ 1		+ 1		+ 1	
2.1							
2.2							
2.3							
2.4							
3.1	indistinct	+ 1		+ 75 - 25		+ 66.7 - 33.3	
3.2	gradual	+ 1		+ 75 - 25		+ 1	
3.3	thin	+ 80 - 20		+ 50 - 50		+ 1	
4.1	present	+ 80 - 20		+ 50 - 50		+ 33.3 - 66.7	
4.2	indistinct	+ 1		+ 1		+ 1	
4.3	far apart evenly dist.	+ 1		- 1		+ 1	
4.4	light	+ 40 - 60		+ 25 - 75		+ 33.3 - 66.7	





5.1	rounded	+ 40 - 60	+ 50 - 50	+ 33.3 - 66.7
5.2	feather	+ 40 - 60	+ 25 - 75	+ 1
Total				
+		+ 7.80	+ 5.50	+ 7.67
-		- 2.20	- 4.50	- 2.33
%				
+		+ 78	+ 55	+ 77
-		- 22	- 45	- 23
Score				
		+ 56	+ 10	+ 54

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

Possible + 56 - Mod./Sub. Perc. Thin Hammerstone



2.2 Interpretation of Individual Flake Scar(s) in Terms of Behavior Units (Morpho-Units) Responsible for Flake Scar R10, C02071, Edge Unit #2

	Prehistoric C02071 Edge Unit #2	AB14-16(b) Min. Perc. Shape Hammer.	AB6-13(a) Min. Shear Shape with P.F.	AB6-13(b) Mod. Shear Shape with P.F.	AB2-2(b) Min. Press. Rub with P.F.	AB10-1(a) Min. Rub/Buffer Hammerstone
1.1	very minimal	+ 1	+ 1	+ 1	+ 1	+ 1
2.1	intermediate to dull	+ 83.3 - 16.7	+ 66.7 - 33.3	- 1	- 1	+ 1
2.2	heavy	+ 1	- 1	+ 1	+ 1	+ 1
2.3	heavy	- 1	+ 66.7 - 33.3	+ 1	+ 1	- 1
2.4	straight with convex project.	+ 83.3 - 16.6	+ 1	+ 1	+ 84 - 16	+ 1
3.1						
3.2						
3.3						
4.1						
4.2						
4.3						
4.4						



5.1	straight	+ 33.3 - 66.7	+ 50 - 50	+ 44 - 56	+ 50 - 50	+ 50 - 50
5.2	step	+ 33.3 - 66.7	- 1	+ 22.3 - 77.7	+ 50 - 50	+ 50 - 50
Total		+ 4.33	+ 3.83	+ 4.66	+ 4.84	+ 5
	-	- 2.67	- 3.17	- 2.34	- 2.16	- 2
%		+ 62	+ 55	+ 67	+ 69	+ 71
	-	- 38	- 45	- 33	- 31	- 29
Score		+ 24	+ 10	+ 34	+ 38	+ 42

2.3 Behavior or Morpho-Unit Alternative Chosen from Above:

- \* Possible + 42 - Min. Rub/Buffer Hammerstone
- Possible + 38 - Min. Pressure Rub with P.F.
- Possible + 34 - Mod. Shear Shape with P.F.

\* Rub/buffet produces the flat little scars found on the specimen. As well, the min. rub/buffet with hammerstone was used on the other edge unit (#1).



2.4 Summary of Behavior Units (Morpho-Units) Identified on Artifact C02071

Main Scar #	Edge Unit Scar #	Rating on Scoring Scale	Final +/- Score	Behavior Unit	Experimental Control Specimen
03		Indeterminate	+ 20	Mod./Sub. Percussion Thin Hammerstone (represents a failed scar)	AB16-17(a)
	Edge Unit <sub>1</sub>	Possible	+ 36	Min. Rub Buffet Hammerstone	AB10-1
021		Possible	+ 34	Mod. Perc. Shape Hammerstone	AB3-17
R4		Possible	+ 56	Mod./Sub. Perc. Thin Hammerstone	AB16-7(a)
R10		Possible	+ 56	Mod./Sub. Perc. Thin Hammerstone	AB16-7(a)
R10	Edge Unit <sub>2</sub>	Possible	+ 42	Min. Rub/Buffet Hammerstone	AB10-1(a)





### 3.0 Interpretation of Behavior (Technological) Units

#### (a) Transforming Behavior Units into Production Units:

#### 3.1 Function of Percussion Thinning/Shaping Units (moderate to very substantial size scars on specimen)

- (a) Moderate Percussion Shape Hammerstone: This margin moving unit was used to shape the edge, probably with a small hammerstone. Flake scar 021 is an example. Production Unit Code is 33:3, 42, 41.
- (b) Substantial/Moderate Percussion Thin with Hammerstone: This behavior unit was used to thin the specimen. Biface thinning or face paring is designed to remove face material rather than alter the outline form of the artifact. Production Unit Code is 40:3/4, 41, 41.

#### 3.2 Function of Pressure Thinning/Shaping Units (minimal to substantial size scars on specimen)

There are no pressure units on this specimen.

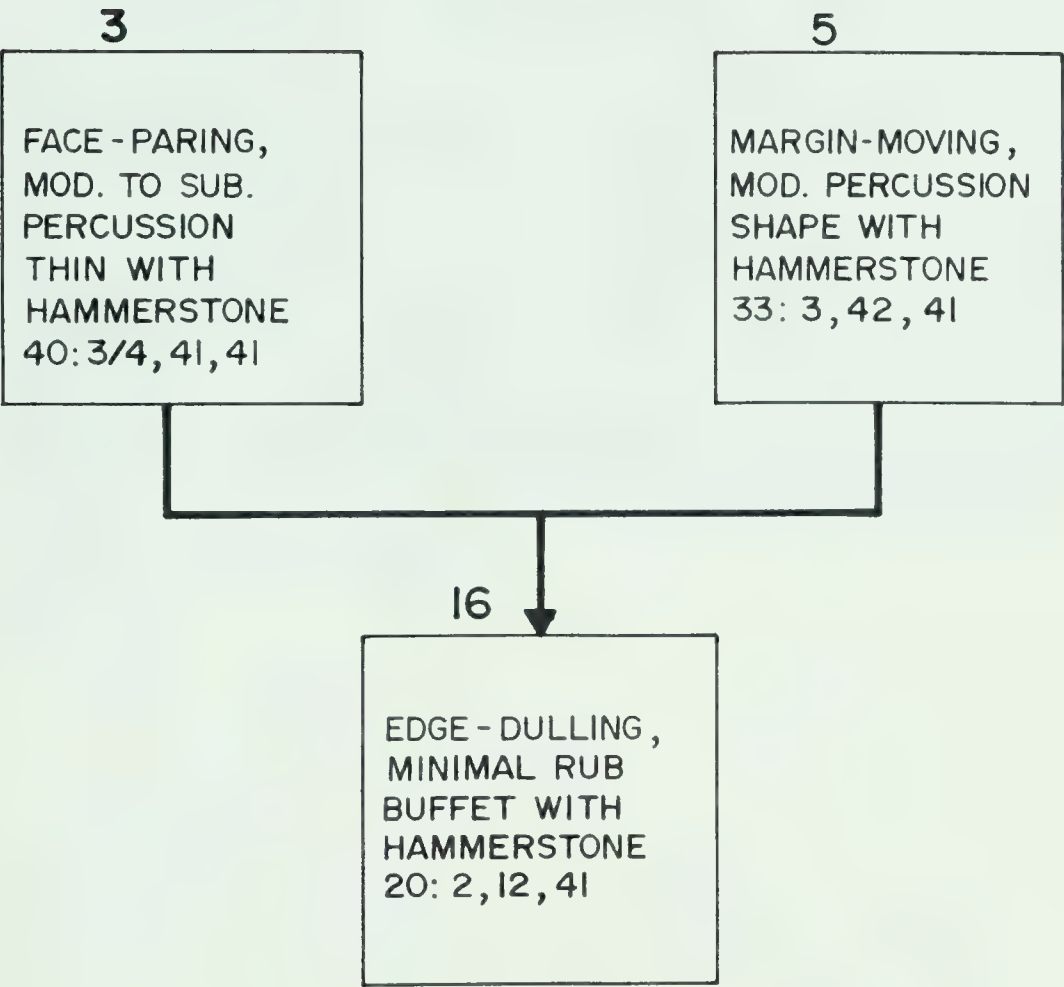
#### 3.3 Function of Edge Units (minimal to very minimal size scars on specimen)

- (a) Minimum Rub/Buffer with Hammerstone: The rub/buffer behavior unit involves a unifacial rubbing of the edge while at the same time using minimal force to drag or bite into the edge. This results in very small flat flake removals and rounds or blunts the edge so it has an intermediate degree of sharpness between sharp and dull. Such an edge is strengthened and smoothed and is more suitable for use as a platform for further thinning/shaping work (see edge units 1 and 2). Production Unit Code is 20:2, 12, 41.



(b) Reconstructing Sequencing of Production Units: C02071

3.4 Flow Diagram of Production Units (below)





### 3.5 Description and Discussion of Technological Grammar Found on Artifact

Analysis of this biface "rough out" or preform was made difficult due to the lack of scars suitable for coding and scoring. There are relatively few scars on this specimen and even fewer ones that are not severely obscured by overlapping and admixture with the original flake core surface, making precise identification of the particular scar's attributes difficult. An example would be scar #018. The termination of this scar is very difficult to define as it appears to blend in or is part of the original flake core surface.

The specimen was manufactured from a flake core as scars 023 and R1 exhibit original core surface. The original platform for the core also remains (see reverse face note on diagram). The flake core was shaped utilizing moderate hammerstone percussion shaping flakes followed by substantial/moderate hammerstone thinning in a few cases (see scars R4, R10). Each artifact face has one or more significant failed scar (i.e., 04 to 08, R5 to R6) and one of these failed thinning/shaping attempts caused a bilateral transverse fracture which broke the specimen causing it to be abandoned during this initial reduction stage. Prior to abandonment, the edges (edge units 1 & 2) were treated with a minimal rub/buffet with a hammerstone. This involves rubbing the edge of the artifact while also dragging the tool so that a very minimal amount of material is removed. This rounds or blunts the edge to an intermediate sharpness, therefore making it stronger and more suitable for a platform for further flake removals.





DdGw-2 ————— CO 2071

OBVERSE FACE

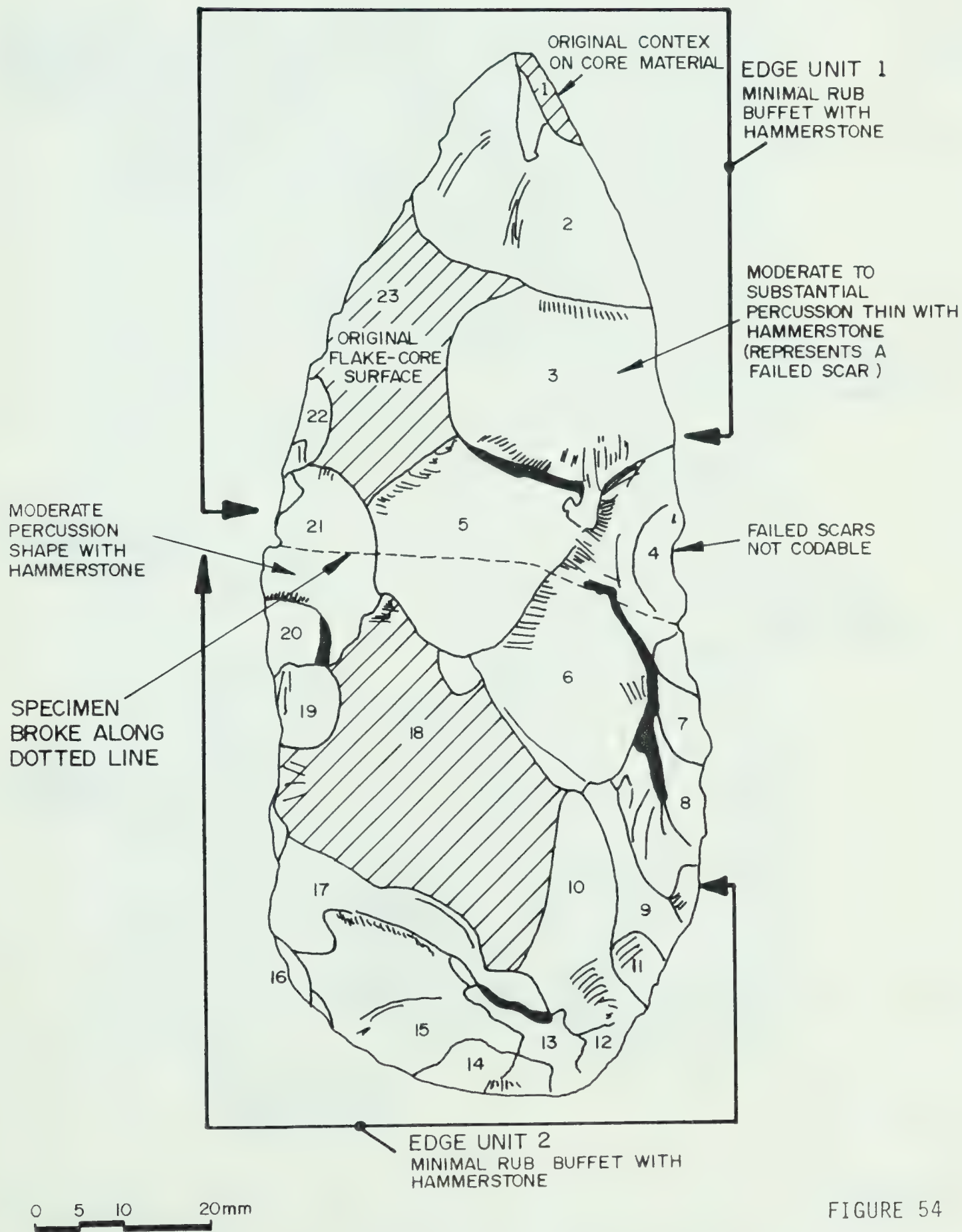


FIGURE 54



REVERSE FACE

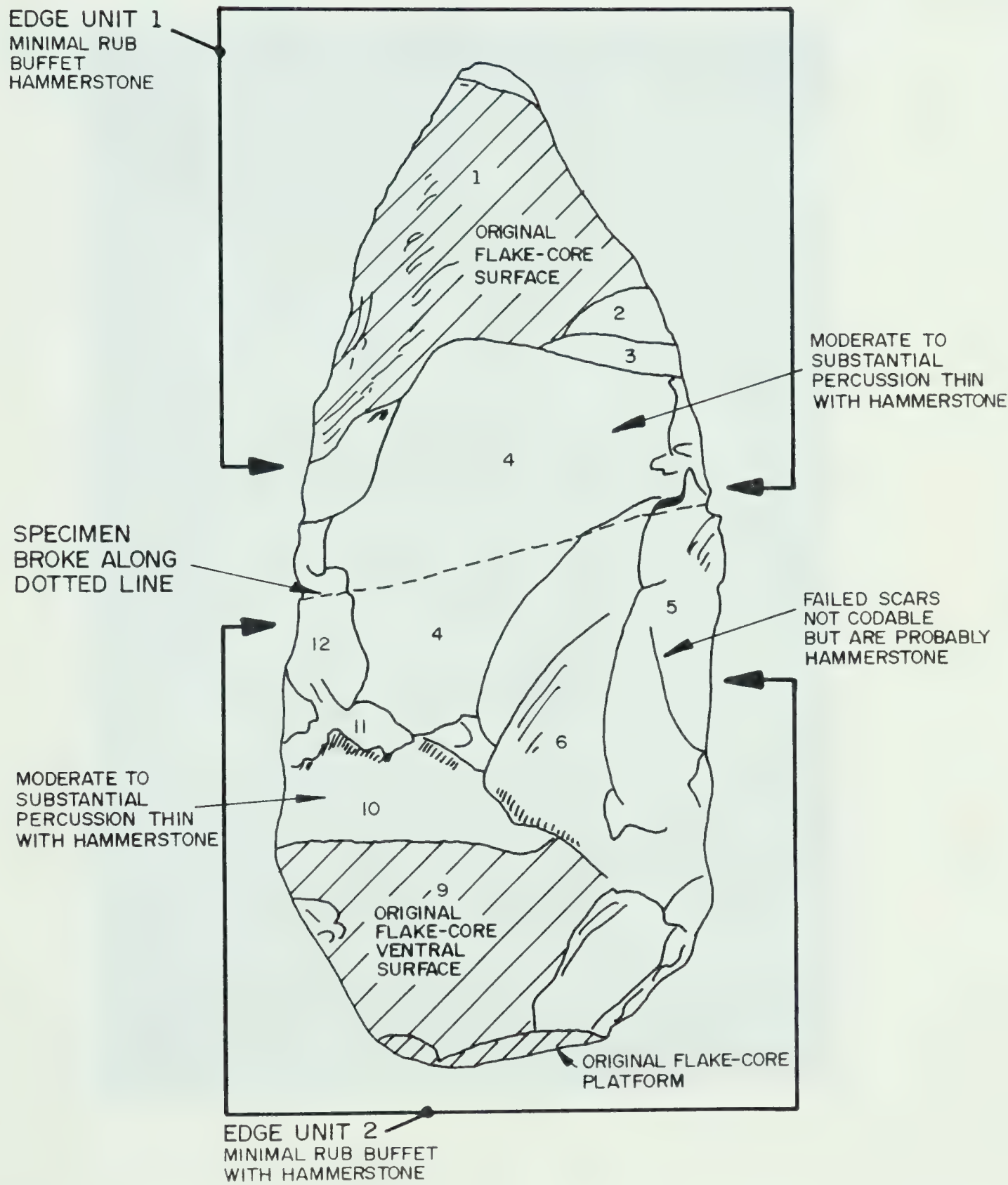


FIGURE 55



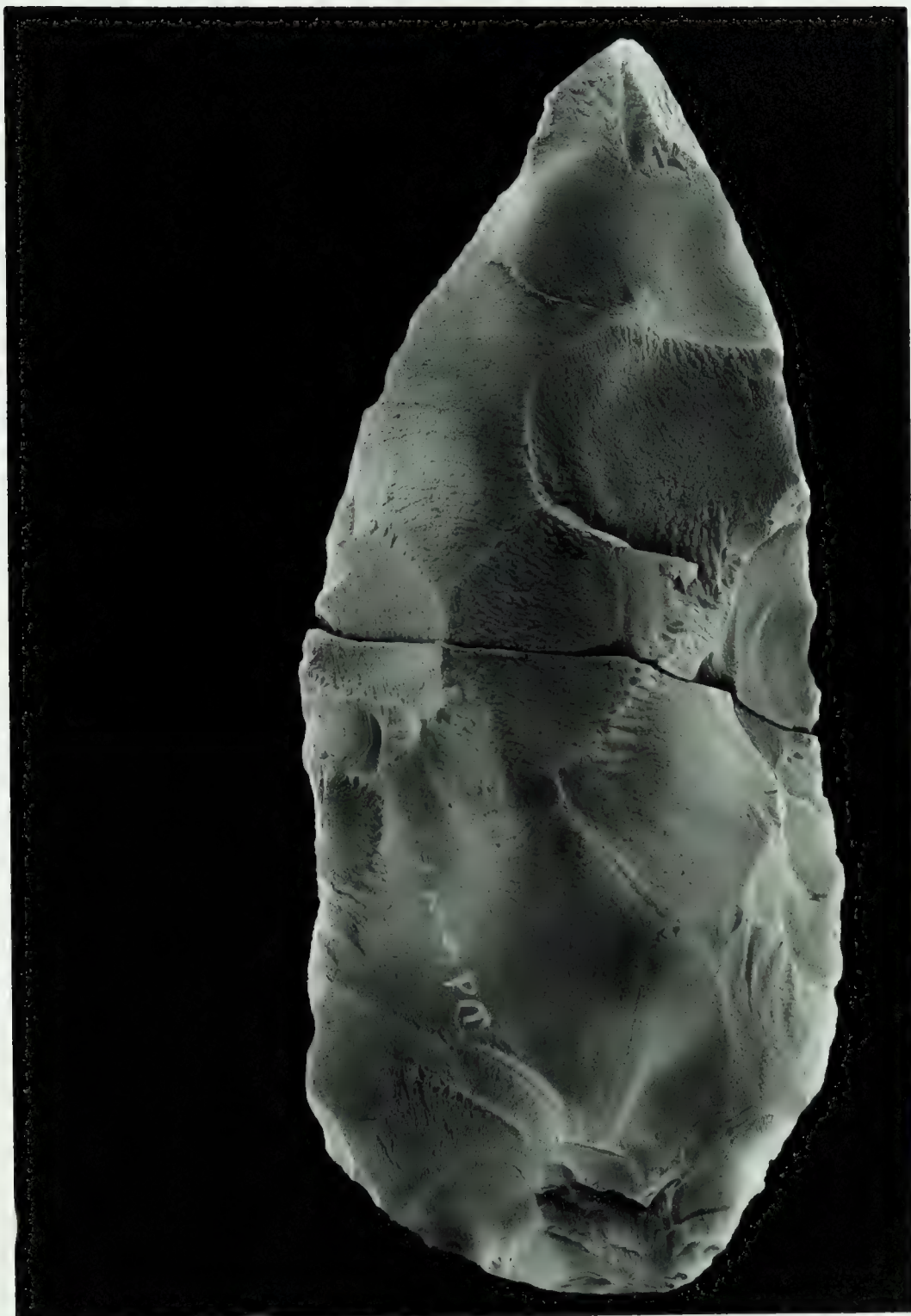


Plate 64. Prehistoric Artifact C02071, Obverse Face.







Plate 65. Prehistoric Artifact C02071, Reverse Face.













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